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Part I.

Original Contributions.

A SECOND REPORT ON HERPES ZOSTER FRONTALIS (Seu OPHTHALMICUS).

By Jonathan Hutchinson, F.R.C.S.

Inasmuch as the history of a disease can never be safely written until a considerable number of examples of it have been carefully observed and recorded, I made no apology for the publication of such additional facts respecting Herpes Ophthalmicus, as have come under my care since my last report on this subject.* Amongst them I have to record some which displayed very unusual features.

One of them illustrates the remarkable fact that occasionally with herpes zoster, we have also paralysis of a motor nerve. In this instance the third nerve was the one affected (see on this point Case XVIII. at page 207). Another shows that now and then the middle division of the fifth is affected at the same time as the first. This I had

* My former report will be found at page 191 of vol. v, with other cases at page 331, and some additional ones at page 46 of the present volume. Mr. Bowman has given a very valuable paper on the same disease at page 1 of this volume, and Mr. Vernon also records some interesting cases in the St. Bartholomew's Reports.

never myself witnessed before, but Hebra has published a portrait, showing the eruption on the cheek as well as on the forehead.

A third is important, because it is to some extent an exception to what I had thought to be the rule, that whenever the side of the nose, *to its tip*, shows vesicles, the eye inflames severely. In this instance there were a few vesicles on the whole of the side of the nose, and the inflammation of the eye was only superficial, slight, and transitory.

The case, however, is not a strong exception, for the eruption on the nose was very slight. My rule ought, perhaps, to be modified a little. It would I think be quite safe to assert that the eye scarcely ever suffers much when the nose is not affected, and that the severity of the eruption on the one part is usually in direct relation with the severity of the inflammation of the other.

Before proceeding to record my cases, I may mention that Dr. Jeffries, of Boston, United States, has informed me in a private letter, that he has recently seen a case in which death occurred from this disease. The cause of death appeared to be the pain and irritation induced by the eruption. The subject of the case was a lady of eighty, in good health for her years. I have never myself seen a case in which death was threatened, although I have seen patients very ill from it. It is not uncommon, if the patient be elderly, for the illness to necessitate several weeks in bed. In reference to the escape of the eye, when the forehead only is affected, I may just mention that in the last number of this Journal, page 106, Mr. Hulke, records a case which supports my rule. The patient had herpes frontalis, which followed the course of the supra-orbital nerves only, and there was no nutritional disturbance of the eye either during the eruption, or afterwards.

In November, 1866, I published the case of a woman,

who, in connection with very severe herpes of the forehead and nose, had in addition to entire loss of sight, a dilated pupil, and complete ptosis. In commenting upon it, I remarked, that both mydriasis and ptosis in connection with herpes were new to me. In making that statement, I had entirely forgotten the case which I am about to give, the notes of which were then recorded in full detail in one of my journals. The man who was the subject of it called on me a few weeks ago, in consequence of a letter which I had written nearly five years before, to request him to do so. I had quite forgotten his case, but on looking up his name in my Index, I had the pleasure of finding the following very interesting notes. He has now wholly recovered, his pupil acts well, there is no trace of ptosis, and only some ill-marked scars remain as mementos of his illness. From his statement, it appears probable that the paralysis of the third nerve passed off in a few weeks after his attendance at the Hospital. I give the particulars of his case just as I find them in my note-book.

Case XXV.—*Herpes Frontalis in the Region of the Right Supra-trochlear Nerve—Paralysis of all the Branches of the Third Nerve on the same side—No Inflammation of the Eye—Complete Recovery from the Paralysis.*

John Ambrose, a cab proprietor, æt. 57, was admitted on March 24th, 1864, suffering from herpes of the right forehead, &c. He was a tall florid man in excellent health. He had formerly lived in Cambridgeshire and suffered from ague. His symptoms had commenced on a Thursday, exactly a week before his application at the Hospital, and had consisted in pain and "stuffing" in his nose.

Through Friday, Saturday, and Sunday he felt very ill, and had pain between his shoulders, and sickness. He did not actually vomit; he "felt shivery and gapish." On the Monday spots came out on his forehead, and he was now too ill to leave his home. On Tuesday the upper lid began to droop, and in the evening the eye was closed. His pain abated somewhat after

these symptoms were developed. He did not come to the Hospital till the Thursday.

Thursday, March 24th.—Present Condition and Remarks.—There is complete ptosis on the right side, and the eyeball is everted. He is quite unable to draw it inwards beyond the middle line. He cannot either elevate or depress it. The pupil is dilated to twice the size of the other, but it acts slightly on sudden exposure.

On the right forehead, from the root of the nose and adjacent part of the eyebrow upwards, is a group of herpes vesicles, and higher up on the top of the scalp are a few isolated ones. The eruption is mild and has been attended by but little pain. The spots come close to the middle line on the forehead, but none of them transgress it. They are all on the inner third of the right forehead, none on the outer two-thirds of the eyebrow or skin above it, nor any on the temporal region. There are none on the upper eyelid, though it is somewhat reddened, especially its inner half. The sight of the eye is perfect, and the superior oblique and the external rectus act well. He persisted in stating that on the affected temple and forehead he could not feel so well as on the other side; but I could not prove any material difference with the compasses.

The distribution of the eruption was in this case peculiar. It did not appear to follow the whole of the supra-orbital branches, but chiefly, if not solely that of the supra-trochlear. The outer two-thirds of the superciliary region were wholly free. The chief patch, a large one, was just over the inner third of the eyebrow, and corresponded exactly with the middle line of the forehead, all the way up to the hairy scalp. Above it were a few isolated vesicles, which were found nearly, but not quite, as high as the vertex. It should be noted that the man was almost bald. Probably a few filaments of the supra-trochlear find their way into the hairy scalp. The congestion of the upper lid may be explained by its contiguity to the diseased part, and the loss of sensation in the forehead (where it was free from vesicles), perhaps resulted from the severe counter-irritation of the eruption.

I have already stated that the man recovered both from the herpes and motor paralysis in a short time. The eruption had been but slight throughout, and there was never the slightest inflammation of the eye.

The occurrence of motor paralysis, together with herpetic eruption seems to favour the belief, that the starting point of irritation is central rather than in nerve-trunks. Dr. Broadbent has published some interesting observations on this point in a recent number of the "Medical Times and Gazette."

CASE XXVI.—*Herpes on the Forehead, Upper Part of Side of Nose, and Middle of Cheek—No Inflammation of the Eye at First—Fixed Pupil and Hazy Cornea supervening one month after the Eruption, and persisting for several months.*

The following case has two very unusual features—first, the eruption came out on the cheek, and second, the eye did not inflame at first, but only several weeks after the herpes.

Isidore Lefevre, æt. 64, was admitted May 15th, 1868. His left forehead was covered with herpes, as also the upper part of side of nose, both eyelids, and the middle of his cheek as low as the lip.

The eruption subsided in the usual way.

At first his conjunctiva was congested, but there was no affection whatever of cornea or iris. It was not till about a month after the herpes that his cornea became slightly dim and the pupil fixed.

July 11th.—The forehead is now covered with scars, as is also the cheek down to the prolabium. There are none on the tip of the nose or its lower half. He has no material pain in the skin of forehead, and none anywhere sufficient to keep him awake at night. He has, however, some tenderness on the lower margin of orbit. The conjunctiva is congested. He can open the eye, but complains of a sense of dragging near the inner corner. The whole cornea looks fishy, *exactly like that of a fish*, deficient in brilliancy, but not actually opaque.

The pupil is more than twice as large as the other, and absolutely motionless both to direct and reflex stimulation. It

is oval from above downwards. The iris is not visibly inflamed, at any rate there is no lymph.

With oblique illumination and magnifying power the cornea is seen to be slightly pitted. The iris is quite clear, there are no visible adhesions. Vision $\frac{10}{100}$.

The cornea remained hazy for several months, and had not wholly cleared when the man ceased to attend.

CASE XXVII.—*Herpes Frontalis of Left Side—No Vesicles on Nose, and no Inflammation of the Eye.*

For the notes of the following case I am indebted to Mr. Wilcox (formerly House Surgeon to the Ophthalmic Hospital, now of Aylesbury), under whose care the patient was.

John Horton, æt. 44, steward, nervous and anxious because out of place. Has been attended for last month with abscess of thumb. Broken in health.

On Monday, March 12th, was attacked with great pain over left eyebrow, extending upwards over left anterior half of head, bounded by median line. On same evening he noticed raised red patches. On Tuesday morning the patches were covered with "blisters," about the size of peas. Eye was painful but not red.

Present state.—No pain, but very decidedly decreasing sensation over left anterior half of head. On forehead are several patches of brown hard crusts. Each scab when removed leaves a deep pit. One or two scabs in eyebrow near to nose. None on nose or eyelids. One patch partly on forehead, partly in hair of scalp. No scabs beyond median line. Entirely limited to left side.

CASE XXVIII.—*Herpes Frontalis of Right Side—Supra-Orbital and Trochlear Nerves affected—Single Ulcer on Cornea—No Iritis.*

Mr. Streatfield was kind enough to shew me the subject of the following report, and to give me permission to make a note of his case.

May 21st.—Thomas Cox, æt. 38. He came to the Hospital a fortnight after the eruption began. The scars were numerous on the forehead (right) and scalp, and there were one or two

on the side of the bridge of the nose. There had been no eruption on the side of the nose lower than the level of the inner canthus. He had been, he said, three days in bed during the acute stage of the eruption.

The eye had wholly escaped with the exception of a small ulcer on the lower and inner part of cornea. The iris was perfectly clear and the pupil active. The cornea was quite clear, excepting close to the ulcer, and the conjunctiva was but little congested. The skin of the forehead was but little numb, and not materially painful.

The ulcer on the cornea was possibly an herpetic vesicle.

In this instance the lower part of the nose wholly escaped, and it is interesting to note that although a single small ulcer occurred on the cornea, there was no inflammation of the deeper parts of the eye. The character of the eye-affection was quite different from that which occurs when the whole nose is involved.

Case XXIX.—*Herpes affecting the Forehead (Left), and, to a slight extent, the whole side of the Nose—Eye temporarily Congested, but escaping without permanent damage.*

Elizabeth Smith, æt. 62, came to the Ophthalmic Hospital on September 21st, with a severe attack of herpes frontalis. The eruption had been out about a week, and covered the left forehead, &c., and the left side of nose to its tip. The side of nose near to the canthus was covered, lower down the vesicles were fewer and not confluent, whilst near the tip they were quite small.

She was a tall, thin woman, and considered herself very nervous. There were few or no vesicles on the upper lid itself, and the eye although congested showed no special inflammation.

The pain for a few days had been very severe.

I saw her for the first time on October 1st, three weeks after the onset of the attack. The scabs on the forehead were then thick, and the scars on the side of nose very distinct. The eye was congested and the whole cornea a little hazy, the surface appearing a little blistered (very slightly indeed). The pupil under atropine dilated moderately, and was round.

January, 1869.—This patient recovered well from the herpes, but has continued to attend on account of the painfulness of the

portion of scalp involved. The cornea has perfectly cleared, and no damage has been done to the eye. The scars left are deep and extensive.

CASE XXX.—*Very severe eruption of Herpes in the right Frontal region—No vesicles on the Nose and no inflammation of the Eye —Persistent pain in the part four years afterwards.*

This case came under my notice at the Hospital for Skin Diseases, where the man applied four years after the herpes, on account of severe pain in the skin of the forehead, which had still persisted. I transcribe notes taken at the time.

"A man, æt. 58, comes with deep scars of herpes frontalis on the right forehead and right upper eyelid. There are none whatever on his nose. He says that the scars were left by an attack of "erysipelas," four years ago. He now comes on account of the painful condition of the scalp, which prevents him from sleeping at nights. On the top of his head there is a bald patch of cicatrix; the cicatrices near to the middle line on his forehead are very deep."

"It would appear that he had a severe attack. He was in bed nine weeks. The eye does not appear to have been affected beyond superficial irritation. He says it was closed by swelling for four weeks."

"The pain has increased during the last two months. He complains of it most just above the orbit. He complains that the pain sometimes comes on the side of his nose."

CASE XXXI.—*Herpes Frontalis et Nasalis—Slight transitory Iritis.*

I was indebted to my friend Mr. Morgan for an opportunity of seeing the following case:—William Henry, æt. 22. He had been admitted at the Ophthalmic Hospital on August 7, 1868, with well-marked frontal herpes on the right side. The vesicles had been but few in number, large portions of the skin being wholly free. They had occurred in the usual parts of the forehead, but few or none on the upper eyelid, or in the eyebrow. Two or three came out on the side of the nose, and a single one near the tip of the nose. He was not laid up by the attack, but kept at work.

When admitted (on the 4th day of the attack) he had slight iritis. Mr. Morgan used atropine, and the pupil dilated irregularly. Three days later, however, the atropine had wholly overcome the adhesions, and the pupil was large and round. There was some conjunctival congestion.

I saw him on September 10, more than a month after the beginning of the attack. The conjunctiva was still a little congested, as also the ciliary region of the sclerotic. There were numerous large purple veins passing backwards to the ciliary region. The pupil acted well, and he had perfect vision.

The scars left, although few in number, were very deep and conspicuous.

Case XXXII.—*Herpes Frontalis—No vesicles in the Nose, and no inflammation of the Eye.*

Mary Ann Clement, æt. 17, applied at the Ophthalmic Hospital on the third day of her attack. The eruption was strictly confined to the forehead, upper lid, and side of scalp. It did not transgress the middle line. There were no vesicles on any part of side of nose. Both lids are œdematous. The eye was not inflamed.

The case was a mild one and soon got well.

Case XXXIII.—*Herpes Frontalis, with a few spots on the side of Nose.—No material inflammation of the Eye.*

Mrs. Vernon, æt. 60, applied as an out-patient at the London Hospital on January 1st, 1869. She had suffered five weeks before from herpes of the right forehead, and now applied on account of the neuralgic pains which had been left. There were scars over the forehead on the left side, and she stated that the eruption had covered that part and the upper eyelid. She was one week in bed, and was treated for erysipelas.

In February Dr. Down, whose patient she was, was kind enough to send her to me for inspection. The scars were now (three months after the attack) but slight; there were not more than one or two on the nose, and the eye was quite clear. She told me that during the attack the side of the nose was painful, but showed scarcely any eruption. She still suffered from neuralgia, but it was getting better.

ON THE RECOVERY OF SIGHT AFTER ATROPHY OF THE OPTIC DISCS.

By Robert P. Oglesby,

Assistant Demonstrator of Anatomy in Leeds School of Medicine.

In a former Paper on the subject (*vide Lancet* for August 22, 1868), I adduced several well marked cases in which, after total blindness had resulted from atrophy of the optic discs, and had continued for a period of time ranging from weeks to months, and even years, recovery of sight ultimately resulted. I have now to record other cases of a similar kind, which I think may be the means of directing the attention of ophthalmologists more closely to this interesting subject. I have little hesitation in affirming, as stated in my former paper on the subject, "that a fair proportion of patients whose vision has been lost from atrophy of the discs recover a little sight, perhaps sufficient to enable them to earn a livelihood in occupations not requiring good vision. A much smaller proportion recover almost perfect vision, and are able to return to their usual employments."

There is good ground for believing that, in the largest proportion of these cases, the atrophy is the sequence of acute inflammation of the disc, and that vision is restored at an earlier period than when loss of sight has resulted from simple atrophy.

In some cases of atrophy following neuritis, the disc resumes its healthy capillary tint, although marked whiteness has existed some time, and the disc circulation is occasionally restored in cases of simple atrophy, though I cannot positively state that such an atrophy has resulted in total blindness.

In my former paper I gave in full the notes of two

such cases. The one was a case of optic neuritis, the other a case of simple atrophy associated with loco-motor ataxy. In both cases the disc circulation was restored.

In the first case the right disc has not, as yet, recovered any visual power, and remains brilliantly white. The left disc, after remaining in an atrophic condition for more than two months, ultimately resumed a healthy appearance, and vision which was limited to shadows is now No. 1 Jaeger.

In the second case loss of sight occurred suddenly. On examination ten days afterwards, both discs were found to be atrophic (simple atrophy). Vision not 20 Jaeger.

There is reason to believe that these changes had been progressing by slight degrees for a considerable time previous to this sudden impairment of vision. The discs remained brilliantly white for three months. At the expiration of that time they gradually resumed their normal tint, and finally disc circulation was perfectly restored. Vision of each eye is now 4 Jaeger. Up to this time no further improvement in vision has taken place.

In the fourth case published, an attack of hemiplegia was temporarily destructive to vision, the patient remaining totally blind for four months. The sight of the right eye (the paralysis affecting the left side) improved more rapidly than the left. In April, 1867, the vision of the right eye was 4 Jaeger, that of the left limited to the counting of fingers; and this condition had existed for a length of time, not the slightest perceptible improvement having taken place. Since that time marked improvement has taken place in the vision of the left eye (*vide* Notes of Case V). In this case there is no alteration in the colour of the discs, they both remain very white; and it further bears me out in what I previously stated, as follows:—

"It is not, however, essential that an optic disc, once atrophied, should resume its normal appearance in order to regain its functional powers. In the remaining two cases, a lapse of time varying from four months to four

years occurred before vision began to return. Both patients were totally blind, both now enjoy good vision, yet in neither has the slightest alteration in the colour of the discs taken place along with restoration of vision. They remain brilliantly white."

The most instructive case is No. 1 of my former paper, in which I found the discs in an early stage of convalescence, so far as the recovery of sight was concerned. No alteration in their appearance having taken place. They remain very white.

The first symptom of returning vision in this case was the ability to discern the outline of a jet of gas which burnt brightly, without the knowledge of its exact situation. The next step towards recovery was the gaining of this knowledge, for the hand could soon be directed with precision towards any bright flame.

Vision in this case is improving, though as yet very slowly, and the patient has not reached the third stage of convalescence in which the discernment of colours takes place.

It will be well here to state what are these different stages of convalescence, and I cannot do better than quote from my former paper:—

"The early symptoms of returning vision in these cases appears to be, first, a passing glimmer here and again of a jet of gas or the blaze of a bright fire; afterwards, a pretty correct knowledge of the situation of the light so seen. In this stage, convalescence often remains stationary for a considerable time. The second stage is shown by a better judgment of the size of objects and of distance, and the patient can distinguish between an adult and a child, and begins to avoid objects likely to impede locomotion, such as chairs, tables, &c. In the third stage the discernment of colours is accomplished, and after this, recovery is generally very progressive."

I shall reserve for another paper the remarks I have to make upon the best means we can adopt to procure re-

covery of sight in these apparently hopeless cases of blindness from atrophy of the optic discs. The subject is one of such importance that a length of time must necessarily elapse before such a thorough knowledge can be gained as would justify one in coming to any definite conclusion. Nevertheless, I have little doubt that suitable treatment of disc atrophy, resulting from rapid inflammatory changes, is now more or less adopted by most ophthalmic surgeons. I can only add that increasing experience teaches me much may be done in the way of treatment with a beneficial result.

For the first three cases I am much indebted to Mr. Pridgin Teale, who has kindly allowed me to publish them.

Case I.

January, 1869.—Elizabeth B., æt. 43, states that she enjoyed good health till the summer of 1854, when she suffered from typhus fever. She had much delirium, but convalesced rapidly. Eyesight, before and after fever, very good. She has only once been pregnant, and then aborted at the fourth month. Menstruation is performed with regularity.

During the summer of 1868, dimness of vision came on rather suddenly—the sight of the right eye being the worst. About that time she was seen by Mr. Pridgin Teale. Vision of the right eye was then limited to the counting of fingers, that of the left to the reading of large print. Both discs presented well-marked examples of simple atrophy.

January 16, 1869.—Vision of the right eye after being limited to the counting of fingers for a considerable time, gradually began to improve. Now reads 16 Jaeger.

Vision of left eye. Can read small print.

Both discs are very white.

Case II.

December 14, 1868. Mary M., æt. 10 years, is an unhealthy, strumous-looking child. Her mother gives me the following history:—When about three years old, she suffered from some

brain mischief, and repeatedly had convulsions after convalescence appeared to have been established. Dimness of sight followed these convulsive attacks, and at the expiration of twelve months, had become so much worse, that she could not count fingers. Mr. Pridgin Teale then saw her, and found that both discs were atrophied (simple atrophy). The eyes remained in this condition for a considerable period (the mother could not remember the exact time, but positively stated it to be many months), then very slowly began to improve.

Present condition. Vision of right eye. 6 Jaeger.
Vision of left eye. Shadows only.

Both discs are white.

The following imperfect notes I copy from Mr. Pridgin Teale's case-book. Mr. Teale assures me that it is a case well illustrating the subject I am writing upon. This, of all the cases of which I give notes, is the only one I have not been able personally to investigate.

Case III.

November, 1866. Mr. P——. There are the remains of optic neuritis. Both discs are woolly, and commencing to atrophy on one side. Their margins are ill defined. The views are very tortuous and small. Vision, 50 Snellen.

September, 1867. Appearance of disc the same. Reads 30 Snellen.

December, 1868. Appearance of discs unaltered. Vision, 20 Snellen, easily. Letters of 15 Snellen.

Case IV.

During the month of August, 1867, Elizabeth M., æt. 50, suffered from typhus fever. She had much delirium, and pain in the head. During convalescence, vision, which had previously been good, began to fail, and total blindness resulted. She remained in this condition for several months. She could then see the blaze of the fire; three months after first seeing the fire, she could find her way about in the house. Vision is now so far improved, that she can read No. 6 Jaeger with either eye. The discs are atrophied.

Case V.

April, 1867. Sarah H., æt. 39, has been under observation for the past two years. She gives the following brief history: She has been delicate since puberty, having frequently suffered from bronchitis and dyspepsia. Her grandmother lost the use of one side shortly before her death, but no other member of her family suffered from paralysis. Four years ago she had two slight attacks of hemiplegia, which affected the left hand and leg. Sight was totally lost immediately after the fits, and returned only at the expiration of four months, when she could see the fire blaze. Since that time vision has gradually improved.

Vision of right eye: reads No. 4 Jaeger.

Vision of left eye: counts fingers.

Optic discs: both are pearly-white. Vessels small, but not tortuous.

January, 1869. The vision of the right eye is still No. 4 Jaeger, but there is great improvement in that of the left, for it is now No. 19 Jaeger.

Case VI.

January, 1868. Margaret S., æt. 32, a sickly-looking woman, gives the following history:—She is the mother of six children, three of whom are living; the remainder died in infancy. She has never enjoyed robust health. Nine months ago she was suckling a hearty, strong infant, being at that time unusually depressed and weak. Brow-ache, which at first was slight, now supervened, but increased in severity till the pain became almost unbearable. The pain continued for seven or eight weeks. During its continuance, impairment of vision was noticed, and it increased so rapidly that at the end of two months both eyes were blind.

Present condition. The right eye can just discern a bright jet of gas, burning at the distance of one foot.

The left eye is quite dark.

Both discs are raised and woolly, and slightly vascular—evidently the result of acute and inflammatory mischief.

March 10, 1868. Marked changes in discs. Both atrophied

and very white. The brow-ache has left her, but she suffers from vertigo.

May, 1868. The discs remain unaltered in appearance. With the right eye she can see the blaze of the fire at a considerable distance. The left eye remains dark.

June 16. Right eye counts fingers.
Left eye quite dark.

September 15. Begins to avoid objects in her way as she moves about the house. There is no improvement in the vision of the left eye. The discs remain unaltered in colour.

FURTHER OBSERVATIONS UPON AN IMPROVED METHOD OF EXTRACTING IN CASES OF CATARACT.

By Charles Bell Taylor, M.D. Edin., F.R.C.S.E.

Surgeon to the Nottingham and Midland Eye Infirmary.

[Read at the Meeting of the British Medical Association at Oxford, August 1868.]

In the year 1865 I called the attention of the profession to a method of extracting in cases of cataract, which I had found successful in several unpromising cases. Since then I have in the "British," the "Edinburgh Medical," and other journals, from time to time related such facts and cases as appeared to me worthy of record.

I now propose to give a *résumé* of the whole, and describe the best method of performing the operation.

The instruments that I employ are a pair of sharp forceps that pierce the sclerotic, a very light speculum (a modification of Von Graefe's), and two knives, a line in width and bent at an angle similar to the ordinary iridectomy knives, one with a sharp point, and the other with a blunt or bulbous extremity.

As the danger, even if vomiting occurs, is very slight with the form of incision I am about to describe, I usually prefer to have the patient narcotised, and, as a rule, push the chloroform to full anæsthesia. The lids should then be kept apart by the speculum, and the globe gently depressed with a pair of ordinary forceps in the operator's right hand. Having got the eye into a favourable position, it should be fixed by the sharp forceps at about the junction of the upper with the middle third of the cornea. The pointed knife is then entered in the corneo-sclerotic junction, one or two lines from the forceps, at the summit of the cornea, pushed well into the anterior chamber, and,

with a gentle sawing motion, the eye being steadied with the left hand, carried along the summit, a distance of three lines. The aqueous will now escape, and if we wish to extract without iridectomy, or if the condition of the globe before and after incision, as regards tension, is such that we have reason to fear excessive bleeding from excision of a portion of iris, it will be well at this stage to open the capsule carefully in its central and lower segments, a proceeding very much facilitated by the small size of the wound, the safety with which the globe may be manipulated, and a previously dilated pupil. If the cornea remains firm, if the lens is readily loosened on incision of the capsule, if the patient is perfectly quiescent, shows no tendency to vomit, and other circumstances prove favourable, we may extract without iridectomy, in which case it will be simply necessary to enlarge the wound in the manner hereafter to be described.*

If, from the nature of the case, we have decided on associating an iridectomy with the extraction, and desire to derive the advantages of an iridectomy, so far as tension is concerned, the iris forceps should now be introduced into the wound, the blades opened, and the iris seized near to its pupillary border, drawn out, and divided

* In some patients it is hardly worth while to run the increased risk which must always attend the attempt to save a portion of iris. Their facial confirmation and usual position of their upper lids is such as to completely conceal a coloboma made directly upwards, and it is in these cases neither a cosmetic defect or disability, so far as vision is concerned. In some, too (about 1 in 3) the danger of inflammatory mischief is so great that the bruising occasioned by the exit of the lens will almost necessarily end in adhesions, and consequent greater mischief and deformity than would be occasioned by a simple iridectomy directly upwards. When, however, this inflammatory or other contra-indication does not exist, and the patients have prominent globes, we must not hold the iris too cheap, but remember that it plays a most important part in regulating the amount of light admitted to the eye, corrects the aberration occasioned by sphericity of the cornea, diminishes irregular circles of diffusion, contributes to the clearness of eccentric vision, and no doubt, after extraction in such cases, compensates largely for the absence of the lens.

at the right hand angle of the incision, carried over and excised at the left as in iridectomy for glaucoma. If, however, tension is quite normal, and the removal of a portion of iris is not likely to have a favourable influence on the after-progress of the case, a very small incision, or the merest slit in the constrictor fibres of the iris, will suffice to reduce the risk from bruising to a minimum, and still to some extent preserve the advantages of a natural pupil. If we have not found it necessary to open the capsule prior to iridectomy, it should now be rendered tense and carefully incised with the ordinary cystotome, the stem of which it is as well to have made either of platinum or soft steel, so that it may be bent in accordance with the projection of the patient's brow, or relative position of the eyeball. Having opened the capsule, and slightly loosened the lens, the eye should be seized to the right of the globe with a pair of ordinary forceps, and the wound enlarged to the left with the blunt-pointed knife (encroaching slightly upon the sclerotic) to an extent that experience tells us will, with a similar wound to the right, suffice for the ready exit of the lens; fixing the eye then with the left hand, the process must be repeated to the right. The incision is thus localized in a definite line, and its extent at any period of the operation is only limited by the will of the operator.

If the iris has been left intact, a comparatively large flap will be required, but if iridectomy has either preceded or is associated with the extraction, a very small shallow flap will suffice, one which yields readily to the advancing lens, while it is sufficiently slit-like and elastic to close without artificial apposition or external support, strong enough to resist protrusion by advancing vitreous, and too resilient to permit of accidental reflection.

The lens may now be extruded by slight pressure upon the globe, without passing any instrument into the eye, cortical fragments removed with ease, and any portion of capsule or lens matter likely to obstruct vision, be either

torn across or removed with the sharp hook, canula forceps, or sucker.

If, from the existence of firm adhesions, the lens cannot be started by pressure, it should be dipped out with the wire-loop spoon, an instrument which from its extreme tenuity assists the exit of the cataract without adding to its bulk.*

If it is desirable to extract by the lower section, the same form of incision may be employed, and this is preferable in a few cases where the lens is superficially softened, as any pulpy cortical matter left behind in the eye will gravitate to the bottom of the anterior chamber, pass harmlessly through the coloboma iridis, and either undergo absorption, or be washed out with the aqueous. The risk of its lodging behind the lower segment of iris and setting up subsequent irritation is thus avoided, but the section is less sheltered, and the coloboma uglier and more disturbing to vision.

The operation completed, I apply a drop of solution of atropine in the corner of the eye, and cover the lids with a pad of fine cotton wool, dipped in, but not saturated with cold water. If sodden, the pad is heavy, irregular, unmanageable; but just moistened on the surface, it fits accurately into the orbital cavity, and speedily dries into a smooth film, closely bedded to the surface of the lids, absorbing moisture, insuring equable support, a regular temperature, and the exclusion of light. It must be secured *in situ*, with gentle pressure, by thin strips of soap plaister, spread on unglazed calico (which adheres without warming). I find this by far the best dressing. Pressure can be accurately applied by strips fixed to the forehead and cheek, and, if necessary, by an additional broad strap passed from temple to temple. Any kind of compress bandage may also, if required, be readily applied over the pads and plaister. Inflammatory or other complications coming on after the operation must be treated on general

* Made for me by Coxeter.

principles, such, however, very seldom occur; rest on the couch for 48 hours in a partially darkened room, and confinement for a week, being, as a rule, all the after-treatment required.

In judging of a *résumé* of cases treated by this method, it is important to remember that they have not been selected in any way. That I have never refused a case, and indeed with a view of testing the method in question, have operated on several that in the opinion of their medical attendants and others presented little or no chance of a successful issue.

The cases operated on since November, 1865, are 91 in number, of these 10 were over 80 years of age, one being 88, and 18, 70 or over that age. Of this number the flap suppurated in three cases only. In 88 the wound healed, and the patients made good recoveries, with the exception of one poor woman, æt. 82, subject to severe attacks of epilepsy, who died in a fit 36 hours after the operation, in which case we found on post-mortem examination the wound healed, and the result of the operation so far as we could judge very good. Some of these patients are suffering from the effect of pre-existing amaurosis, others from remnants of capsule or partially closed pupils, which will admit of remedy by further operative interference, but the majority have already recovered excellent sight. I have reported a number of these cases in detail in the "Edinburgh Medical Journal," and shall complete the list so soon as a fair record of the optical results in 100 cases can be obtained.

Of the three cases in which the eye suppurated, one, an exceedingly feeble nervous woman, had been discharged as unfit for operation after a four months' stay in an ophthalmic ward elsewhere. This poor patient was quite blind, and fearing that I might refuse to operate upon her, concealed from me the fact that she was suffering from a severe attack of diarrhœa. The operation was completed without mis-adventure, but the diarrhœa became aggra-

vated, the patient delirious, and there was not the slightest attempt at healing, in spite of compress bandages and aromatic poultices, from first to last. Another aged female was in a similar feeble condition, and the case had a like unfavourable termination. The third, also a female, was 86 years of age, had been blind from calcareous degenerate cataract for 12 years, and had suffered from repeated attacks of irido-choroiditis, with the usual result of adherent pupils.

The palpebral apertures were exactly $\frac{5}{8}$ of an inch in length, and the eyes proportionately small. The lens was extracted with the loss of a few drops of vitreous, and I had hopes the case would do well, but vomiting came on, and, contrary to orders, the friends during my absence took her up a steep flight of stairs; this caused increased loss of vitreous, one of the choroidal vessels gave way, and on my return, I found blood trickling down the cheek. Suppuration followed, and singular to relate, both the eye operated on and its fellow wasted, the latter being considerably the most painful of the two.

I think I have said enough to prove that the operation in question has claims upon your serious consideration. It remains now for me to point out certain advantages of this method which might otherwise be overlooked.

In adopting it, the operator may use the right hand for either eye, so that there is no necessity for ambi-dexterity, and no risk of that increased fatality, which, from the greater difficulties of execution, has hitherto attended operations on the left eye. Up to the last moment, or indeed until success is almost certain, we are not committed to any special form of operation; it is in our power, in the interest of the patient, and with perfect safety, to delay, abandon, or modify the operation, as the exigencies of the moment may demand, or unforeseen circumstances require. With an incision three lines only in extent, we are in a position to handle the globe with impunity, while, should any accident occur, such as rupture of the hyaloid,

prolapse of vitreous, recession of the cataract, hæmorrhage into the anterior chamber, vomiting or other alarming symptom from chloroform, we may meet these complications with the utmost calmness and deliberation, knowing that the safety of the patient is secured. The protruding vitreous may be clipped off, a suture may be applied, blood sucked out of the chamber, the wound slightly enlarged, or the lens dipped out with the wire spoon; or what is sometimes better, we may safely delay the extraction by making the iridectomy a preliminary rather than a part of the operation;* and, utilising the experience we have gained of the patient's peculiarities, the state of the eyeball and condition of the lens to the benefit of both patient and operator when extracting some six weeks later. Should, on the contrary, all go well, we may aim at the maximum of success, and enlarge the wound sufficiently to permit the exit of the lens without an iridectomy, and this, the wound being localized with such extreme precision, and well back in the corneo-sclerotic junction, may be accomplished with an incision decidedly smaller than the one required in the old flap operation. It is easy to see whether the section is large enough, if the lens is previously loosened, and we may thus in some cases attain, either with or without the aid of the wire spoon, that highest indication of success,—a central and moveable pupil. Short of this also, we may make the iridectomy a mere slit or simple division of the constrictor fibres of the pupil, leaving the ciliary margin untouched, sufficient to permit of the exit of the lens with a minimum amount of bruising, and thus preserve, though to a less degree, the advantages of a natural pupil. If, in the extraction, without iridectomy, the iris should prolapse, the comparatively small size of the wound, and the greater firmness of the flap will

* Certainly, when iridectomy is performed at the same time as the extraction, the occurrence of secondary cataract is more common than in the flap method; it is difficult to say why, but it is probably owing to exudation from the recently cut edges of iris.

permit of our safely replacing it, as well as of coaxing out any cortical débris that may have floated into the pupillary space. It will thus be seen that the greater portion of the operation is completed with a wound so small, that the occurrence of any accident, so far from finding the operator, as in the old flap method, utterly powerless, need not cause either danger, embarrassment, or delay. By performing the iridectomy and laceration of the capsule through a wound only three lines in extent, we preserve the effect of atropine upon the pupil, if not fully, at least to a great extent, and facility of manipulation with an enlarged pupil renders laceration of the capsule a matter of great ease and certainty, and not a mere flourish, to which the difficulties and danger attending the flap method have frequently reduced this portion of the operation.

In the old method, when the aqueous is gone, the cornea wrinkled, and the eyeball collapsed, it is difficult, especially in some lights, such as we are often obliged to put up with in operating, to see the exact position of parts. The complete evacuation of the aqueous occasioned by the large size of the wound, and the irritation of the iris causes the pupil to contract, it would not be safe to render the capsule tense, and its efficient laceration, which would afford so much facility for the subsequent removal of the lens, becomes a matter of difficulty and danger when the tissues are collapsed, and offer no resistance to the pricker. With a three-line incision, on the contrary, such as I have described, the relative position of parts is much better preserved. The aqueous is not so completely evacuated, irritation of the iris is not so great as to cause more than partial contraction of the previously dilated pupil. Wrinkling of the cornea does not obscure the operator's vision, and the capsule is consequently safely, and much more easily rendered tense, and incised to the requisite extent.

Of course the greatest advantage is the greater

certainty of success, and (especially in old people) the slight after-treatment required. It is necessary in infirmary practice to operate upon so many worn-out marasmic individuals, that a fortunate issue in a majority of such patients must plead strongly in favour of any method that has been successfully adopted in like cases.

Since the above was written, I have operated upon 14 cases, making the sum total 105; and I have no further failures to report. In many of the cases the lens was extracted from both eyes at one seance, and a large proportion of the patients were very unfavourable subjects for operation; I may also mention that I never now notice the repeated gushes of aqueous humour subsequent to the extraction, which may be taken as a proof that the wound heals with rapidity, and that the total absence of pain during the operation or afterwards, and the very slight inconvenience occasioned has been most gratifying throughout.

RECURRENT FIBROID TUMOUR OF ORBIT; REMOVAL; REAPPEARANCE OF THE DISEASE IN THE HARD PALATE; EXCISION OF UPPER MAXILLA; RECOVERY.

By George Lawson, F.R.C.S.,

Surgeon to the Royal London Ophthalmic Hospital, Moorfields; and Assistant-Surgeon to the Middlesex Hospital.

The peculiarity in this case is the remarkable tendency which the patient exhibited for the formation of fibroid growths. They did not recur in the site from which they had been removed, as such tumours most frequently do, but on each occasion they reappeared in a different locality. In the first instance, the growth sprang from a small spot of the periosteum of the orbit, from which it was so completely excised that it has not since recurred. It next appeared in the hard palate of the left upper maxilla, when it was again effectually removed; and lastly it returned in the hard palate of the right side when another operation was performed, and the bone, with the periosteum from which it sprouted, were entirely gouged away. In each instance the tumour sprang from the periosteum of the bone, with which it was inseparably connected. The details of the case are as follows:—

In May, 1866, a lady, æt. 32, came under my care on account of a tumour in the left orbit.

History.—She stated that it had been growing, she thought, about six years. It appeared first as a small firm mass at the upper part of the outer wall of the orbit, and could be felt through the upper lid. As it grew, it extended itself into the upper eyelid, stretching it downwards over the eye, and pushing the globe inwards, towards the nose. When I first saw the patient there was a tumour in the upper eyelid, about the size of a small horse-

chesnut, which could be traced backwards into the outer part of the orbit. It had drawn the outer half of the lid completely over the eye, and dragged it, by its weight and bulk, to below the lower lid.

The globe was forced inwards by the growth, and could not be everted to the mesial line of the orbit. The tumour was firm, and so elastic as to give the impression of fluid.

Operation.—The outer canthus was divided, and the upper lid turned up, so as freely to expose its conjunctival surface, through which an incision was then made on to the tumour. With a little dissection the growth was traced to the outer wall of the orbit, from the periosteum of which it had sprung. After it was removed, the lid was replaced, and a single stitch closed the cut edges of the outer canthus.

The patient recovered, without a bad symptom; the eye gradually regained its power of eversion, and the lid, which had been much stretched, shrunk to its proper dimensions.

On examination, the tumour was found to be recurrent fibroid. It was enclosed in a delicate capsule, which isolated it from the structures in which it lay.

In March, 1867, the patient again came under my notice. The eye and eyelid had completely recovered from all effects of the operation. It was for a tumour in the left upper jaw for which she now sought relief.

About four or five months previously, a small swelling appeared in the upper part of the hard palate, on the left side. This rapidly increased, spreading backwards into the soft palate, and forwards, so as to press upon the incisor teeth. The swelling was so soft and elastic that it conveyed the impression of fluid, and had been punctured. At the time of my seeing her, a solid growth occupied the left hard palate, and included also a portion of the soft palate. It was irregular in outline, but with a perfectly smooth surface.

As the disease was increasing, and had already encroached on the mesial line of the palate, it was necessary to remove it. This I did by first making a central incision through the lip, and then drawing an incisor tooth. I excised, with a fine saw and bone forceps, the whole of the left hard palate with the alveolus, and cut away with a bistoury as much of the soft palate as was involved in the disease. The tumour was of a similar structure to

that which I had previously removed from the orbit. From this operation the patient made a rapid recovery.

In October of the same year, the patient again came under my care. The disease had recurred, and shown itself in the hard palate of the right upper maxilla, opposite to the first and second molar teeth. There was also a fibroid tumour in the parotid region, which had been present some years, but had now begun to increase in size. I decided at once to remove the disease from the palate, and this I did with a gouge, freely scooping away the surface of bone with the periosteum from which it grew. I also dissected out the tumour over the parotid, which was of the same nature as the disease elsewhere.

February 9, 1869. There has since been no recurrence of the disease.

A MODIFIED OPERATION FOR CLOSED PUPIL AFTER REMOVAL OF CATARACT.

By Henry D. Noyes, M.D., of New York,

Surgeon to New York Eye and Ear Infirmary.

When severe or protracted inflammation has followed the removal of cataract, and good perception of light remains, the hope of recovering sight depends on the possibility of making a permanent opening through the dense membrane which often occupies the lenticular fossa.

This membrane is found upon the iris as a framework, and consists chiefly of new connective tissue re-inforcing both iris and capsule. It often acquires a toughness which defies the grasp of iris forceps, and renders the usual method of iridectomy unavailing. It is often highly vascular, and the flow of blood into the anterior chamber soon compels the operator to desist.

Iridotomy, that is, a simple incision through the diaphragm, may sometimes succeed, but the aperture is very liable to close.

Another operation, devised by Dr. Agnew, of New York, will sometimes overcome the difficulty. A broad needle is pushed through the cornea and membrane, at the distance of a line from the limbus; while this is held in position, a wound is made at the opposite side of the cornea, through which a small hook is introduced and caught in the hole made by the needle in the secondary cataract. In pulling out the hook this hole is enlarged, and perhaps a portion of tissue brought through the corneal wound. The purpose of the needle is two-fold: first, to make an opening through the membrane; second, to offer sufficient resistance in tearing it.

The second indication of the needle is of great importance; without it either a dialysis at the ciliary ring may occur, or the drag of the hook pulls so hard on the sclera

as to cause it to be deeply indented, and the membrane will not yield.

But the help of the stop-needle is not always sufficient to tear a hole in this membrane. I have been foiled in the attempt, and therefore compelled to devise another method.

It is as follows:—The instruments needed are a stop spring speculum, fixation forceps, a rather broad Graefe's extraction knife, two small hooks, and a pair of scissors. It is better to give an anæsthetic. The Graefe's knife is entered at the outer margin of the cornea, and carried completely across in the horizontal meridian, until it emerges at a corresponding point on the opposite side; the wound of counter-puncture must be as large as that of entrance.

The knife is partially withdrawn, and when its point comes opposite the middle of the iris, it is plunged backwards through the diaphragm into the vitreous. In doing this the handle is raised from the horizontal to an oblique position, and by the escape of aqueous at the inner wound the iris comes forward to meet the point of the knife. The wound in the diaphragm should be made as large as possible. When this has been done the knife is quickly withdrawn before all the aqueous humour shall have escaped.

Immediately, before bleeding becomes profuse, a hook is passed through each corneal wound. The operator holds one in each hand. The hooks are blunt at the point, have rather an open curve, are very slender, and made of soft metal, so that the shank may be bent to any angle; the shank is about an inch long.

The hook which enters at the inner corneal wound must have a bend at the middle of the shank to nearly a right angle. This hook it is better to put in first, then put in the hook at the outer wound. The points of both hooks are now to be caught in the wound made through the middle of the iris and traction to be made in opposite

directions. The effort must be, to drag out a portion of tissue at each corneal wound, and if any can be pulled through, it must be cut off, and thus the hooks are liberated. If none can be brought out, the hook must be disengaged when it comes to the corneal wound.

The manipulation of the hooks requires tact and delicacy; to rotate the bent hook so that it shall first enter flatwise, and then be turned to catch in the iris, is a little troublesome. When both hooks are fairly caught in the iris, any needful degree of force may be used upon the membrane without danger of doing mischief. The force is expended exclusively upon the membrane to be torn, and inasmuch as one hook pulls against the other, the available amount of force is much greater than can be safely employed by any other mode of operating.

I have yet to find a secondary cataract as tough as not to yield an opening to this persuasion. The pupil thus made is central and abundantly large. It is better to make it large, because there will be ultimately a slight reduction of its size as the corrugated sides of the membrane stretch out.

I have applied this method to three cases, and in all have felt satisfied that a less efficient proceeding would not have secured success.

The degree of reaction after the operation has been moderate, and the eye has been considered well in 10 days, or two weeks.

Case of Extraction of Cataract and subsequent Operation.

The following case, in which the operation above described was resorted to, possesses features which induce me to relate it in detail:—

Colonel G. F. T., civil engineer, æt. 61, in robust health, accustomed to exposure, had dimness of sight for 6 or 7 years, during which time he enjoyed the attentions of a person calling himself "oculist," who pronounced his case retinitis. The patient found mydriatics improve his sight, and had become accustomed

to use atropine. He used a very dilute solution which he prepared, and also resorted to a perforated diaphragm which he had learned aided his sight in drawing, reading, &c.

A proper examination showed that he had imperfect cataract in both eyes; the striæ pretty equally diffused through the lenses. His pupils were naturally small. I used a solution of atropia, gr. ij ad ʒj, to make ophthalmoscopic examination, and was annoyed to find the next day that it had excited a smart conjunctivitis and erythema of the cheek and of the lids. The patient told me he was used to this, that such was always the effect of atropia, and he used a dilute solution of iodine to control it. In a few days the attack passed away.

I had no doubt from his history that cataract had existed for many years, and was making slow progress. The loss of sight was now so great that he could no longer read, and it became a serious question what to do. As the development of opacity was so slow, I determined to perform keratonyxis, and at the same time make an iridectomy upwards.

This was done satisfactorily, and for a week no unpleasant consequences followed. I was induced to do iridectomy because I was afraid to use atropia, and hoped thus to avoid iritis, while by the needle the lens should be fitted for speedy removal. After a week inflammation ensued in the form of irido-phakitis, and this intensified until cyclitis threatened, and that of a purulent type. The eye was very tender, tense, painful, and perception of light growing feeble.

In consultation with Dr. Agnew, I decided that extraction of the lens was imperative. This was done by a section at the lower edge of the cornea with iridectomy. The operation at the upper part of the cornea would have been excessively difficult, because the eye was deep, and the palpebral opening small. It was necessary to use the spoon in getting out a portion of the lens.

Immediately after the operation the eye became better, and now it was desired to use a mydriatic. Daturine was almost as irritating as atropia, and finally a solution of hyosciamine gr. iv ad ʒj was found to be tolerated. The employment of extract of Belladonna to the forehead caused erythema as readily as atropia in the eye. Gradually, under applications of cold water and the

idage, the inflammation abated and the eye appeared healthy. ne pupil was almost completely closed, a minute opening remained covered by semi-transparent capsule. Though this patient could count fingers at 1 foot.

Two months after the eye had regainced its normal state the pupil was opened by two hooks in the manner above described. The result was vision $\frac{2}{3}$ with + 4.

My inferences in the above case are, that rather than resort to keratonyxis to complete the opacity of an immature senile cataract, it is better to do modified linear extraction. I have acted on this conviction in two cases since the above operation, and with good result.

When severe inflammation has been set up by keratonyxis, removal of the lens is the proper treatment.

The irritating effect of atropia on the conjunctiva and skin is to be looked upon as an idiosyncracy of the individual. If daturine cannot be tolerated, hyoscyamine may answer.

COLOUR BLINDNESS, AN EFFECT OF NEURITIS.

By J. J. Chisholm, M.D., Charleston, S.C. (U. S. A.)

Mrs. C., æt. 35, heretofore enjoying always perfect health, was attacked July, 1865, with typhus fever, and only recovered after a very severe struggle. When convalescence had set in, she gained flesh rapidly, and in a couple of months, from the day of attack, she weighed more than she had ever done. One month from the establishment of convalescence, on going to bed, she perceived a numbness in the soles of her feet, which progressed upwards, and by morning she had lost sensation in her lower extremities. During that day a mist or haziness came over the right eye, unaccompanied at first by any uneasiness. With the increasing haziness pain came on accompanied by some injection of the conjunctiva. She suffered intensely for some hours with pain in the eyeball, and as this subsided, this eye was left, in about 36 hours from the earliest symptom, totally blind. Similar phenomena then made their appearance in the left eye, and running through the same phases, culminated in 36 hours in the destruction of sight in it. In 3 days from the commencement of this attack she was left in utter darkness. With the exception of an unusual dilatation of both pupils, the eyes were to all appearances perfectly natural. This condition of total blindness continued for two weeks, after which time the perception of strong light returned, and in a few months she could with either eye distinguish large objects at a short distance.

She first came under my observation February, 1866. She could not then read No. 20 Jaeger test-types. At this time the deadened sensation of the legs and feet had not altogether passed off, although her thighs and even legs were quite sensitive. Both pupils were still unnaturally dilated. Strychnia and iron with bark were prescribed and taken for several weeks with decided benefit.

The patient was again examined in November, 1866. With effort she can now read brilliant (No. 1 Jaeger test-types) with either eye. Her distant vision for small objects is very unsatisfactory. In looking at the carpet upon the floor she can only discern the pattern immediately around the spot upon which she

is standing. Six feet off it can only be made out by staring intently for some little time. With this effort she can discern even small objects. The most interesting connection in the case is the defect in detecting colour, achromatopsia. For a long time her vision was achromatic. Even when small objects could be clearly defined, she could distinguish colours only as either white and black, or shades of grey. The restoration to chromatic vision showed itself in a slowly growing perception of blue shades. After some months the shades of yellow could be perceived. Reds cannot yet be detected. All the shades of red appear brown.

In both eyes there is still moderate dilatation of the pupils with torpidity in iritic movements. Also a prominence of both globes. At no time has there been any interference in the movement of either eye. The first ophthalmoscopic examination gave a shaded outline to the disc. The second examination, after an interval of six months, exhibited a clearly defined disc of decided palor—atrophy to a certain extent.

Acuteness of hearing has been restored with perfect sensibility in the lower extremities. During the attack there were no other cerebral symptoms than those indicated.

Colour blindness as a pathological condition is so rarely met with, that all cases throwing any light upon this curious condition should be recorded. From these reported facts, when they become sufficiently numerous, physiological principles of great interest may be deduced for the solution of the problem, viz., whether there are special nerve fibres, for the recognition of special colours, independent of those used in the clear definition of objects. In the above interesting case the disease evidently commenced with intra-cranial troubles, as evidenced by defective hearing and loss of sensibility in the lower extremities. *Pari passu* with the slow removal of the proximate cause, was the gradual restoration of the oppressed functions. Progressive and permanent achromatopsia has been noted as accompanying progressive atrophy. The restoration (even partial) of chromatic vision when lost in affections of the optic nerve, is seldom observed.

NOTES OF MISCELLANEOUS CASES.

By Jonathan Hutchinson, F.R.C.S.

(Continued from page 154.)

No. XXXV.—*Double Glaucoma in middle life after Erysipelas of the face, and with the history of violent attacks of Facial Neuralgia.*

In the following note I confine my attention to the history of the antecedents of the glaucoma. In our fourth volume I recorded some cases in which severe neuralgia had preceded the occurrence of glaucomatous changes in the eyes. Professor Horner has since taken up the same point, and has given other cases, whilst a series of important experiments have been instituted by Professor Wegner. Of the latter we have already given an account. The evidence in favour of the nerve-origin of glaucoma seems increasing on all hands. Iridectomy is possibly chiefly efficient as a species of neurotomy. Whether vascular changes are the next stage in the process or whether we may not, without absurdity, suspect a condition of tonic spasm in the sclerotic, is a matter about which I feel much doubt. At any rate cases illustrating the antecedents of this curious disease are valuable, and as such I record the following:—

Mrs. Crockett, æt. 34, in girlhood had weak sight, probably hypermetropia. She had occasionally used glasses. Admitted April 28th, 1868.

Last Christmas she was attacked by erysipelas of the face; her eyelids were quite closed. She was five weeks in bed, and altogether ten weeks ill. When she recovered she found her sight very dim, and during the next few weeks it steadily failed. She has not seen to read since her illness. Both eyes, but the left especially, have been sore and tender, but she has not had any violent pain in them. She has often suffered from

neuralgia in her face, and especially during her recovery from erysipelas. She had been ailing some months before the erysipelas.

Both globes are hard, the left being the harder one. In both the cornea is steamy and inspection difficult. In both, however, the disc may be seen to be cupped, and in the left there is very active arterial pulsation. The disc is not in either eye pale to any considerable degree. In both eyes the pupil is dilated and quite motionless and oval, with the long axis horizontal. She can just at 12″ read No. 20 with either eye. The left, the harder one, sees rather more sharply than the other.

Her attacks of neuralgia appear to have been definite and very severe. She says the pain would affect the whole of one-half of the face, and especially the side of the nose. It was generally the left side, but sometimes the right, never however being so severe on the right as on the left. She is very liable to colds. "The least thing will give me cold."

No. XXXVI.—*Paralysis of one Third Nerve in an Infant, with partial Hemiplegia—History suspicious of Inherited Syphilis.*

William H. Lemude, æt. 3 years and 10 months, was brought to the Ophthalmic Hospital on March 2nd, on account of his right eye. He had ptosis, divergent strabismus, and dilated pupil. The other eye was not in any way affected. The right third nerve appeared to be implicated in all its branches, but in none of them to a state of complete paralysis, thus the ptosis was not absolute, and the pupil, although twice the size of the other, acted somewhat on exposure to light.

The history was that the eye symptoms had followed an attack of measles eighteen months ago. Before this he had had several other illnesses. During the measles he was very ill, and several times his mother thought him dead. He never had any fit. When he recovered "he was a mere skeleton," and his mother found that he was weak in his left limbs, and that his right eyelid drooped. Before this he had been able to walk, but he has not done so since.

His left limbs are still weak and somewhat atrophied. He never used the arm, and the fingers are kept fixed in the palm. It is much thinner than the other arm.

In early infancy symptoms had occurred very suspiciously like those of hereditary syphilis, but not conclusively so. I thought it wise, however, to adapt my treatment to this probability.

Paralysis of any of the ocular nerves is of such infrequent occurrence in childhood, that I have thought this case worth recording, notwithstanding the obscurity of the diagnosis.

No. XXXVII.—*Very profuse Hæmatemesis—Attack of severe general Spasms three days later, followed by failure of Sight—No Ocular changes—Report of the state one year later.*

Mrs. G., æt. about 48, of Esher, Surrey, was sent to me by Dr. Peacock on March 22nd, 1866. She could see only the largest capitals. The pupils were of normal and equal size, but sluggish, they dilated well with atropine, and on examination with the ophthalmoscope, I could detect nothing in explanation of her loss of sight. She was pale and nervous, but not extremely weak. Dr. Peacock informed me that she had no cardiac disease nor any morbid condition of the urine. Through life she had enjoyed excellent sight, and the history of the illness which had led to her amaurosis was the following:—On Monday, January 16th, she was attacked by profuse hæmatemesis. The vomiting of blood continued to recur until Wednesday, and was extremely profuse, so much so that her death was expected. Dr. Peacock was summoned in consultation with her usual medical attendant, and the diagnosis of gastric ulcer and arterial hæmorrhage was given. During Thursday she remained extremely feeble and perfectly blanched from loss of blood. On Friday in the evening she had an attack of general spasms and cramp, which caused most severe pain, and affected all her limbs. On recovering from this she found for the first time that her sight was dim. On Saturday her sight was much worse, and during the next few days it failed so rapidly that at the end of a week she was in the condition noted above, able only to see large capitals. Mrs. G. herself attributed the attack of cramp to a night draught which had been given her, and she described symptoms very like those which strychnia might have produced, but she told me that her medical attendant had assured her that the draught did not contain anything which could have caused the attack. (She still,

however, retains a strong opinion on this point.) During the month which intervened between the failure of her sight and the date of her visit to me, she had gradually improved in health, but gained nothing as regards her sight. I prescribed small doses of nux vomica with iron, but did not see her again for nearly a year.

On January 31st, 1867, Mrs. G. again consulted me. Her sight had remained much as it was, or had perhaps got a little worse. She could only make out single letters of Snellen No. 70 at 12″. The pupils were small. I used atropine, and again examined with the ophthalmoscope. The discs were rather pale, but not remarkably so. The veins were of normal size, but the branches of the arteria centralis were all of them very much diminished in size. The two eyes were exactly alike, both as to vision and objective appearances. There was no cupping of the disc, nor any disease of retina or choroid.

Mrs. G. still suffers from dyspeptic symptoms and severe headaches, but is otherwise in tolerable health. She has had no further losses of blood. It should be stated that prior to the attack after which her sight failed she had twice suffered from hæmatemesis, first at the age of 18, and subsequently when 26. She has not menstruated for several years past.

No. XXXVIII.—*Sudden Attack of Acute Febrile Symptoms in a previously healthy infant—Inflammation of both Eyes—Abscess in the Hip—Pyæmia?—Recovery.*

George Jones, an infant of 18 months, was brought to the Hospital on November 3rd, 1867. His left eyeball had suppurated and collapsed, and the right was the seat of a large perforating ulcer of the cornea. The history was that he had been a healthy child until a few weeks ago, when he was attacked by an "inward fever," after which his eyes inflamed. He had at the same time an abscess on one hip. He had been very ill, but at the time of his application at the Hospital was already gaining in general health.

The occurrence of abscess suggests the probable occurrence of some blood disease allied to pyæmia.

No. XXXIX.—*Acute Ophthalmia, with Diphtheritic Pellicle on the Conjunctiva—Entire Destruction of both Cornea.*

The following case clearly belongs to a very different category to the preceding one. The ophthalmia appeared to be local, and was not preceded by febrile symptoms. It was of the "diphtheritic" type, if that term is to be applied to inflammations, mucous membranes having exudations of coherent lymph.

Frank Webb, an infant æt. 14 months, was brought to the Ophthalmic Hospital two months after the outset of his disease, and when both eyes were lost. In each eye the cornea was destroyed by ulceration and sloughing, and the iris prolapsed. He was a stout child, and had been well cared for. He had been brought up by hand. He had not had any illness. The statement was that both eyes had very suddenly inflamed. In one night "the eyelids of both had swelled up as large as walnuts." There did not appear to have ever been any profuse purulent discharge. I found the lids lined with dense coherent pellicles of lymph, which were with difficulty detached from the conjunctiva, to which they adhered.

As there was clearly nothing to be done for restoration of sight, I allowed the child to return home to a village in Cambridgeshire, with a chloride of zinc lotion, to be used until the remains of the inflammation had subsided. No diphtheria was known to have occurred in the village.

No. XL.—*White Atrophy of Optic Nerves (Neuritis?) in association with general Arthritis (Spinal?)—Vesicles on the Cornea.*

The following case interests me in reference to the connection between nerve lesions and rheumatoid changes in joints. I have long believed that there are forms of "*spinal* rheumatism" in which the pain and nutritional changes in the joints are induced by derangements beginning in the spinal cord. The same inference seems recently to have been made by several independent observers, and some important facts have been published illustrating the joint-changes which occur in loco-motor ataxy. Ophthalmoscopists will probably have good oppor-

tunities for helping in the discussion, as they already have done in so many other directions in connection with diseases of the nervous system.

Mr. Rait, æt. nearly 80, has been almost blind for a year past. Both optic discs are uniformly grey white, and in both the arteria centralis is so much diminished that it is only just to be discovered. The margins of the disc are in most parts abruptly defined, but here and there a little jagged. Thus we have but little evidence from the state of the discs as to whether their present atrophy is due to neuritis or is primary. The history, however, favours the suspicion of neuritis. He tells us that about eighteen months ago his eyes failed suddenly. Up to that time he could read well, and he attributes his failure to his having engaged in hard reading of Colenso's books. The failure was so rapid that in a week he could scarcely see capitals. During the next few months he got steadily worse. At present he cannot count fingers. It appears, on cross-questioning, that this attack was not his first. The right eye had indeed been very defective for many years before, and a few years ago, when at Bath, he had a temporary blindness of the left, from which in a week or two he recovered.

At no time has he suffered from cerebral symptoms, other than those shewn by his eyes, never headache or sickness. He never smoked, and has always been temperate in eating and drinking.

He came to the Hospital, not on account of his amaurosis, but because his left eye "felt gritty." We found the left cornea covered with vesicles. In the course of a few days most of these had disappeared.

His arteries are not calcareous.

The subject of our case is a healthy looking florid old man. He was born in Shields, but came to London in boyhood. He was a tailor until he was 60, of very temperate habits, and in excellent health. From 60 to 70 he was engaged as a scripture reader, and "found no fault with himself," for "he could do anything." At about 70 he found his joints a little stiffening, and if he sat long could not get up easily. A little later than this he had "rheumatic fever," and was three months in bed. The joints, especially the knees, swelled much; he had not much pain in them, but curious nervous sensations in the legs, "as if one

leg were two." When he left his bed he used crutches, and after a while went to Bath. He has had no severe illness since that, but his upper extremities have gradually become implicated. At present both wrists, both elbows, and both shoulders are slightly swollen. There is puffy swelling external to the joints, and slight effusion within. All of them are somewhat stiffened, and he complains of pain on sudden motion. At other times he has no pain. All of them grate and crackle on movement, and I have no doubt that they are the seats of the changes of "chronic rheumatic arthritis." His lower extremities are much better than formerly, and he walks fairly. During the last year or two he has been much inconvenienced by obstinate constipation. His hands are puffy, and often get cold. He has no subjective sensations (pins and needles, &c.) in them. We may note that the smaller joints of the fingers, &c., are not stiffened. He appears to have good tactile sensibility. He can button his shirt, but, owing to the state of his wrists, he cannot feed himself. He has never had lumbago or sciatica. The vesications on his left cornea were attributed to the application of a very hot poultice, which was used on account of some pain in the eye, but very possibly they were there before the poultice, and caused the pain. They probably indicate a peculiar condition of the nutrition of the structure implicated.

No. XLI.—*Retinitis pigmentosa in an advanced stage—Gradual failure during* 20 *years or more—Nyctalopia not present—Reported failure of sight in a daughter of the patient.*

James Mold, æt. 60, from Ware, Herts, was brought to the Hospital in January, 1869. His eyes presented the more advanced changes met with in that form of choroido-retinitis, known as "retinitis pigmentosa." The changes were symmetrical.

In each eye the disc was pale yellow-grey ("waxy-looking"), all the smaller vessels had disappeared, and of the central ones only a single venous trunk upwards and one downwards could be traced. Immediately round the disc was a small area in which but little pigment was present. At the margin of this area pigment accumulations in dots and streaks began to be seen, and rapidly increased in the direction towards the meridian until the dots and patches almost became confluent. No-

where were any patches of absorbed choroid, and the similarity of the patches to bone corpuscles and canaliculi was very striking. The pigment accumulations could be easily ascertained to be in front of the choroidal vessels, but no retinal ones could be found by which to test the position in that structure. He could not see to count fingers. At the extreme periphery (ora serrata) the pigment diminished in quantity and almost ceased.

History.—The man was a healthy farm labourer. He said that fourteen years ago his sight had so far failed that he could not see to read. It had been failing very gradually for some time before. During the last year he had been obliged to give up work, and latterly had been an inmate of the workhouse. His account of the first stages of his disease was vague, and it seemed probable that it had been coming on long before he noticed it. He would not admit that he had ever experienced "night blindness." He could, he said, on the contrary, always see better in the dusk than in sunlight, and always very fairly by moonlight. He had often been annoyed by globes of light before his eyes and also by moving black specks, but latterly the muscæ had disappeared, whilst the photopsiæ remained.

He was a man of dark complexion, having black hair and grey eyes. He had never suffered from any form of ill health, excepting dyspepsia, never rheumatic. His father and mother were from distant parts of the country, and were not related before their marriage. He was not aware that any relatives had suffered from defect of sight. He had himself two children, a son and daughter. The latter, aged 30, complains of her sight.

This case was examined by several experienced ophthalmic surgeons, who declared that the quantity of pigment was in excess of anything they had seen before. I used my best endeavours to have the daughter brought to town for examination, but, as she was in ill health and at a great distance, I did not succeed. I ask especial attention to the fact of absence of nyctalopia, as a very unusual one.

No. XLII.—*Right eye Normal and the left Myopic—Syphilitic retinitis in the right and myopia then first discovered in the left—A similar condition, as regards refraction, in one of the patient's children.*

A woman, æt. about 30, came up from Derby with myopic glasses, No. 14, but with the complaint that one eye was much worse than the other. I found that she read brilliant with the left at about 10 inches, and that at no distance with the right could she see anything higher than 20 Jaeger. The left globe looked longer than the other.

January 15, 1869.—Both pupils dilated well with atropine. In the left eye the inverted image was readily seen at about 18″, and there was a crescent above the disc. The media and retina were perfectly clear. In the right eye the erect image was seen at 2″ to 3″. There were numerous small and indistinct flakes in the vitreous, and the retina in the neighbourhood of the disc was hazy.

On further questioning, I found that the patient had enjoyed good sight in early life, and until three years ago. She had only found glasses necessary two years ago. Four years ago she had suffered from "some disease from her husband." The account as to syphilis was not very positive. She had discharge and soreness for some time, and became hoarse, but did not notice any rash. It was, however, almost a year after this occurrence that she found her right eye fail. She had also since suffered much from nervousness, and had, she said, at times been almost out of her mind.

My diagnosis in this case was, that she had, congenitally, eyes of different refractive power—the right normal, the left myopic. That three years ago she had syphilitic inflammation of the vitreous and retina in the right, and that after this, for the first time, she was compelled to use her left, and then made the discovery that it needed glasses. Her statement that at one period her sight improved so much that she was able to read ordinary type, and that it afterwards relapsed, favoured this view. She told me further that her eldest boy could see well with one eye, and not with the other.

On a subsequent occasion she brought her boy to me. I

found him myopic in the right, an eighth, and with the left normal; both, however, having a degree of astigmatism. The right disc showed a pigmented crescent, which was wholly absent in the other.

No. XLIII.—*Sudden failure of Sight in an old Man without other Symptoms—Senile Rheumatism.*

A very healthy looking man, aged 78, came up from Harwich, on account of his sight. His history was an unusual one. His occupation for many years past had consisted in exhibiting a camera-obscura to visitors. He was, whilst thus engaged, in a dark room inspecting a white sheet, but never exposed to glare of light. He had enjoyed excellent sight through the whole of his life, until one day on leaving his camera, he suddenly found that he could not see. He had not had any symptoms of a fit, nor had he any material headache. The two eyes were equally affected. From that time to the date of his application at the Hospital, he had never been able to read. With + 16, I found that he could just read Jaeger 14. He thought that he had not got either better or worse since it first occurred. With the ophthalmoscope we found the discs both pale, and around the margin in each, was a circle of exposed sclerotic of irregular width, just like what is common in myopia. His globes, however, were not myopic. There was no evidence of neuritis.

Excepting that he suffered from senile rheumatism, the old man was in excellent health. He had had one testicle removed in early life on account of an injury, and was very proud of the fact that he had since been the father of six or seven children.

XLIV.—*Injury to the left Forehead in a fall, followed by immediate and complete Blindness of the left Eye, with defect of Smell on the same side.*

A gentleman, æt. 25, was brought to me by Mr. Savory, of Stoke Newington, on account of an injury to his head, which had resulted in the entire and immediate blindness of one eye. He had been pitched head foremost out of a dog-cart, and cut on his left forehead by a stone. He was stunned for a quarter of an hour or so, and then recovered, but found that he was quite blind in the left eye. On examination, I found that he

had lost all sense of smell in the left nostril. With the left eye he could not tell light from dark. There were no ophthalmoscopic changes. This was in August, 1867.

On January 18, 1869, I saw this patient again. His accident was in June, 1867, and he was first brought to me about six weeks after its occurrence. On questioning him again, I find that he recovered from the stunning in half an hour, but had very profuse bleeding from a small wound on his forehead. He was much weakened by this hæmorrhage, and kept his bed several days. The parts about the orbit were much swollen, and he had leeches applied. He never had any bleeding (as far as he knows) from his mouth or nose, and he had no deafness. From his first recovery from the effects of the fall to the present time, he has never been able to perceive light with the eye. When I first saw him he could not smell in the left nostril, but latterly he has regained that faculty.

To-day he appears in perfect health, and states that he is wholly free from any effects of his accident, excepting the loss of sight. I find his left pupil of normal size and active, whilst the other is exposed, but it dilates and remains motionless when the other is covered. The eye diverges a little when he looks at near objects, the divergence is not noticed when he looks into the distance. The media are clear; the optic disc is pale, and presents a shelving cup; there is a very conspicuous patch of pigment at its inner margin, which has nothing to correspond with it in the other eye. The vessels are somewhat smaller in size than in normal eyes, but not very much. The disc although decidedly pale, is not by any means so white as we often see it in cases of advanced atrophy.

It is exceedingly difficult to assign any plausible explanation for the loss of sight in this case.

If we suppose that the sphenoid bone was fractured, and the optic nerve torn across or violently stretched, we have the inexplicable absence of hæmorrhage from the nose, the rapid recovery, the absence of evidence of external fracture of the skull, which would probably have attended it, and the very slight character of the concussion symptoms. The defect in the sense of smell on the same side, which persisted for some months after the accident, certainly lends support to the hypothesis of fracture.

It may be suggested that the very profuse hæmorrhage from the frontal artery was the cause. Cases are recorded in which very free hæmatemesis has been followed by amaurosis, but I am not aware of any facts as to local losses affecting only one eye.

Then we have the possibility of injury to the frontal nerve causing impairment of sight, but against this is the fact that the impairment amounted to absolute extinction, and that from the very first, whereas such effects generally follow after an interval, and only become complete after considerable time.

That there was no material damage to the ophthalmic artery seems clear, for when I first saw him, the intra-ocular circulation seemed normal in every respect, and at the present time, although the small vessels have disappeared, the main trunks can be easily traced.

XLV.—*Loss of one Eye by Choroiditis, the other remaining perfect—Syphilis suspected.*

Mrs. W., aged 48, from Ipswich, attended on account of defective sight in the left eye. With the other she could see as well as ever.

We found the choroid disorganized around the optic disc over a large patch. The margins of the patch were very well defined, and extended on the outer side considerably past the yellow spot, and in other parts the choroidal epithelium was absorbed much more widely. At the principal parts of the fundus both choroid and retina appeared healthy. The disc was scarcely paler than natural, and the central artery and vein were almost of normal size. There were many large irregular blotches of pigment where the choroid was absorbed. The choroidal stroma was thinned at many parts, and at a few small spots the sclerotic showed though quite white. Thus the case differed from "choroiditis disseminata," in that there was but one very large patch.

The patient's history was chiefly negative. She was not known to have had syphilis. Her son had attended for a long time for very intractable inflammation of both corneæ with ulcers. It was not supposed to be syphilitic, but its course was peculiar and suspicious. Mrs. W.'s defect was believed to have com-

menced about a year ago. There had been at times a certain amount of pain in the eye, no photopsiæ, and scarcely any muscæ had been observed. Media clear, excepting some striæ in lens. She had borne seven children, of whom only three are living. No definite symptoms of syphilis in any of them.

Remarks.—I cannot help suspecting that this curious instance of unsymmetrical choroidal disease is really an example of syphilitic taint derived through conception. The keratitis from which her son suffered was very peculiar, and although neither his teeth nor his physiognomy are characteristic of inherited syphilis, they are suspicious. In the form of syphilitic taint which women obtain through conception, we often see single and ill-marked maladies produced, such, for instance, as patches of lupus on the skin, sores on the tongue, in the throat, &c. Another remarkable example of unsymmetrical choroiditis is now under my care. In it a woman has lost one eye, with most extensive choroidal changes, whilst the other is perfect. In her case syphilis is clearly the cause.

PART II.

A Periscope

OF

CONTEMPORARY OPHTHALMIC LITERATURE.

DR. WEGNER: EXPERIMENTAL RESEARCHES ON GLAUCOMA.*

(An abbreviated translation from the *Arch. für Ophth.*, xii. 2, p. 1.)

DURING the last few years, Professor Horner has observed four cases of neuralgia of the fifth nerve, accompanied by glaucoma simplex.

CASE I. B. Ritzmann, 28 years old, has suffered, since her 20th year, from hysterical attacks, palpitations, and cough. In 1858, she had hæmoptysis; in 1859, typhus. In July, 1861, she was attacked in the left side of the forehead, in the eye and temple, by violent pain, which was increased by stooping. There appeared to be before the eye a light cloud, and colours around a flame. Prof. Horner's assistant found in September myopia, c. $\frac{1}{16}$, slight amblyopia of the left eye (No. 1 with difficulty at 3″), contraction of the visual field at the inner and upper side, and excavation of both dics.

She was examined again in January, 1862, after she had been suffering for 14 days from violent pain over the whole left side of the head and in the eye. The left globe was hard; the visual field was much contracted at its inner and upper sides

the media were quite clear; the disc was deeply excavated. She was tolerably stout; no organic change was found in the chest. The right eye was still healthy; there was, however, a central excavation of the disc. On the 27th January, a large iridectomy was made at the upper part; the pain in the eye imme-

* The editors are indebted to Mr. Thomas Windsor, of Manchester, for the following abstract of Wegner's able paper. It is to be considered as supplementary to a notice of the same paper which appeared in a former number, but from which the cases were omitted.

diately ceased, but the violent supra-orbital neuralgia continued. Next day she had only a feeling of pressure in the forehead; in the afternoon there came on much redness and increased temperature of the whole left side of the head; at 5 p.m. the pains were fearful, and continually increased for 1 or 2 hours.

The supra-orbital nerve was very sensitive to pressure, so also were the left infra-orbital and subcutaneus malæ. The eye continued free from pain, and the vision improved, but the pains in the forehead and temple persisted, notwithstanding quinine, and subcutaneous injections of morphia and atropine.

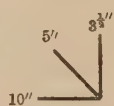
Suddenly, on the 24th March, the eye became painful, the vision worse (No. 2 with difficulty), without redness and without cloudiness of the media. She was now unfortunately obliged to leave Zürich, and was not again seen till the end of the year. The left supra-orbital region was very sensitive to pressure. Spontaneous pains occurred almost daily, and every afternoon there was much redness and heat of the left side of the face. The eyeball was no longer hard. The pupil was rather larger than on the right side. No. 2 Jaeger was read with difficulty, but correctly. The visual field was contracted on its inner and

upper sides

A seton, inserted on the 25th October, had no success; division of the supra-orbital nerve was followed by only a very temporary anæsthesia; the pains, which continued as severe as ever, were relieved by subcutaneous injections of morphia.

In January, 1863, the right eye also was attacked by acute pain.

(O. S.) M. $\frac{1}{10}$ S. $\frac{1}{4}$ Se

(O. D.) M. $\frac{1}{10}$ S. $\frac{3}{8}$ Se 

Right pupil not large, slightly movable; refracting media clear; discs excavated, the left much more than the right one. Subcutaneous injections, paracentesis of the anterior chamber without success; on the 23rd January a large piece of iris was excised from the upper part of the right eye. The pains immediately left the right eye, but continued in the left supra-orbital region. Violent pains in both eyes again recurred towards the beginning of February, during the menstrual period.

During the years 1863 and 1864 vision with the right eye was almost normal, although the field of vision remained contracted, the disc was not distinctly excavated up to its margin, and the eye was rarely painful; there was, however, often pain in the left eye, and supra-orbital region. With respect to the latter eye,

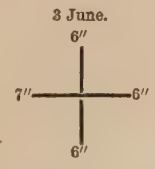
S deviated a little about $\frac{1}{4}$: the field continued contracted, and the excavation very distinct. A paracentesis was now and then made, when the pain in the left eye was very great (thus, on the 3rd June and 8th December, 1863); the effect of the puncture appeared to last longer than before the iridectomy.

The patient was again seen on the 23rd June, 1865. She stated that during the winter of 1864-65, she had suffered but little from pain, whilst during the last three or four weeks there had been violent exacerbations in the *right* eye. Present state: $M\frac{1}{11}$; (O.S). $S = \frac{1}{5}$; (O. D.) $S = \frac{1}{7}$; field of vision contracted especially inwards and upwards, though somewhat also inwards and downwards.

Eyeballs not hard, no congestion or cloudiness. Discs deeply excavated.

The pain in the right eye was much relieved by paracentesis.

Case II.—A woman, æt. 24, tolerably robust, was seen in August, 1860, for the first time by the author. She had suffered for many years from convulsions. The *left* eye had been very painful for some days, and the vision had become impaired; there had been no symptoms of inflammation. The pupil was somewhat large, the fundus was normal; with this eye she read No. 5 Jaeger with difficulty. Towards the end of October the eye became much worse; she had violent attacks of pain, followed by such impairment of sight that only No. 16 could be read; the visual field was contracted on every side, but specially from within and above. At this time she had an hysterical attack; for 24 hours she was half-asleep, spasmodically contracted the extremities, spoke sometimes connectedly and sometimes not. She was seen occasionally between January and June, 1861; the vision of the left eye varied between 15 and 19 Jaeger: the field was much contracted.



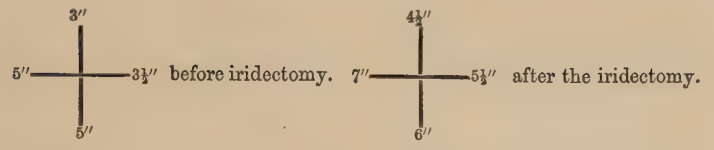
The pupil much dilated and fixed; the globe painful when

touched, never reddened. Right eye slightly hypermetropic; field of vision and pupil normal, no pain.

A sudden change came on the 29th June. Enormous mydriasis of the right pupil was accompanied by excruciating pain and amblyopia, so great that fingers close at hand could scarcely be counted. The disc was somewhat hazy. During this period the left eye read No. 17—19, but was free from pain. In August paracentesis of the right eye was tried; she then saw with that eye fingers to 1′ (read with O. S. No. 11), and had fearful pain; the latter was at once relieved. Next day she could read No. 20, and afterwards could make out No. 19, yet the pain returned during the day.

Again, on the 27th August, there was another change. The most dreadful pains again attacked the *left* eye; its pupil was dilated to the utmost degree (far more than in paralysis of the third nerve), the eyeball was very sensitive to the touch, the vision = No. 19. In respect to the right eye the pupil was normal, there was no pain, and No. 12 was seen. Paracentesis improved the left eye with reference to both pain and vision, yet only temporarily, so that it had to be repeated at short intervals. Till towards the end of October, the vision of the right eye steadily improved, whilst that of the left eye varied in ratio with the attacks of pain. Towards the end of the month and beginning of November (a large seton had been used since the end of September) a remarkable change commenced. The pains in the left globe steadily diminished, the pupil contracted, and the vision improved, whilst the lower eyelid became slightly reddened, sensitive to the touch, and constantly painful. S = (O.D.) No. 3 fluently, (O.S.) words of No. 5. The field of vision was, in a bright light, normal; in comparative darkness slightly contracted. The hyperæmia and hyperæsthesia gradually spread over the upper part of the cheek. During the attacks of pain, which were very severe, the cheek was red, very warm, and swollen to the angle of the mouth. Such continued the state to the beginning of December; fresh neuralgia of the left eye, accompanied by great mydriasis and impaired vision (about No. 15 to 20, and ultimately only perception of the movements of a hand) then recurred; the neuralgia of the eyelid and cheek appeared again on the 18th, and disappeared on the 27th December. The seton had been removed on the 28th November; it was again inserted on the 31st December.

January, 1862.—Violent pains in the eye; only once a cessation, from the 17th to the 20th, when the cheek was again affected. The pupil was very large and fingers could be counted to only $\frac{1}{2}'$ on the 26th; the field of vision was much contracted and the eyeball hard. A large iridectomy upwards was made; it was followed by contraction of the pupil, relief of the pains, S = No. 10. Field of vision at 7″.



She suffered towards the middle of February from most violent attacks of hysteria. On the 13th March the left eye again became painful, the pupil dilated, the vision sank from No. 10 to No. 17; a few days later neuralgia of the cheek. During 1862-63, the right eye remained healthy; the left eye painful, the pupil dilated, the visual field concentrically contracted, vision varying from No. 15 to counting fingers; no ophthalmoscopic change. Paracentesis and the injection of morphia gave relief only for a few hours, and were repeated from time to time.

On the 29th April, 1864, S (O.D.) normal, (O.S.) No. 19; left pupil dilated; paracentesis of the left eye for the last time. On the 2nd May No. 10 was read slowly; no pain; pupil smaller.

31st March, 1865.—No pain; left pupil larger than the right one; the finest print is read close at hand.

The author then passes to the relation of some experiments performed with a view to elucidate the relation between the neuralgia of the fifth nerve and the glaucomatous attacks.

The first question is,—how are the vessels of the iris, choroid, and retina innervated. As the vessels of the iris can be distinctly seen in many young white rabbits, he commenced with the following experiments:—

1. Division of the cervical sympathetic on one side was followed by congestion of the iris: irritation of the upper end of the divided nerve caused anæmia of the iris, and when the irritation was stopped, the congestion recurred.

2. Division of the fifth nerve on one side was followed by congestion of the iris; irritation of the sympathetic of the same side then produced no change.

3. Division of the cervical sympathetic on the one side, of the fifth nerve on the other produced equal congestion on both sides.

The author concludes from these experiments that the vasomotor nerves of the iris entirely depend on the sympathetic; that the roots of the fifth nerve send no vasomotor nerves to the iris, but that the vasomotor branches of the sympathetic pass with it, and are divided at the same time with it. He has also satisfied himself with the ophthalmoscope that the vessels of the choroid and retina depend in like manner on the sympathetic.

Having given an account of the manometer he used for measuring the amount of intra-ocular pressure, he relates two very interesting experiments which he made for the purpose of testing the instrument. In two adult rabbits about the sixth part of the iris was excised from the one eye; sixteen days later

when the wounds were perfectly healed, he measured the pressure both in the operated and the healthy eyes, and found in both cases 6 to 7 mm. less pressure in the operated eye than in the normal one.

Repeated experiments showed that division of the cervical sympathetic was constantly followed by a gradual fall in the intra-ocular pressure to the amount of 4 to 8 mm. This fact may be explained by other experiments in which the author tested the effects of belladonna on the intra-ocular pressure, and in which he found that atropine, whether applied locally or administered internally, considerably diminished the tension of the globe. Hence, if the congestion of the vessels, produced by division of the sympathetic, is the cause of the diminished tension previously mentioned, the action of atropine also must be to paralyse the vasomotor nerves. An injection of half a cubic centimetre of a one per cent. solution of atropine under the skin of the ear of a rabbit was followed by dilatation of the vessels, and increase of temperature from two or three degrees per cent.; moreover, as irritation of the cervical sympathetic had little or no effect, the atropine must have paralysed the peripheral expansions of the nerve or the muscular tissue itself of the vessels.

As the intra-ocular pressure is diminished by paralysis of the vasomotor nerves, we may conclude that it will be increased by their irritation. The experimental verification of this conclusion is very difficult, owing to the liability not to produce sufficient stimulation, or to paralyse the nerves by over-irritation.

The author thinks that his experiments are sufficient to prove that the normal intra-ocular pressure is regulated by the vasomotor nerves of the iris and choroid; and that the cause of glaucoma is a pathological irritation, either idiopathic or reflex, of these nerves.

The following experiment was intended to test the possibility of such a reflex irritation. The nervus auricularis posterior was divided in a rabbit; the vessels of the ear dilated, and the temperature rose. Irritation of the central end of the nerve caused violent pain and extreme contraction of the arteries of both ears; cessation of the irritation was followed by extreme dilatation; division of the sympathetic at once arrested completely the reaction of the vasomotor nerves.

Similar results were obtained in the ear by irritating the auriculo-temporal branch of the fifth, or its peripheral expansions in the lip or conjunctiva, and in the eye by irritating the central end of the supra-orbital nerve. Hence the author considers it proved that the vaso-motor, just as the musculo-motor nerves may be stimulated in a reflex manner through the sensory nerves. These considerations appear to justify the conclusion that in the cases related, the glaucoma was produced in a reflex manner through the affection of the fifth nerve.

The author concludes his able paper, by the remark that this reflex irritation of the vasomotor nerves is worth remembrance in respect to both physiological and pathological facts, for instance, in respect to pallor or redness from violent mental impressions, to total amaurosis accompanying paroxysms of facial neuralgia, to recurrent iritis in cases of posterior synechia, and sympathy.

TWO CASES OF TUMOUR OF THE BRAIN WITH OPTIC NEURITIS—AUTOPSY IN EACH.

By Dr. Williams, Cincinnati, U.S., Medical Record, March 18, 1868.

Case I.—An Irish coachman, æt. 50, died after an illness of about six months. His symptoms had been violent pain in the parts supplied by the left fifth nerve, followed a few weeks later by a sudden attack of convulsions succeeded by maniacal excitement. After this he had optic neuritis, blindness, and dilated pupils. There was bleeding from the left nostril and the left side of face was somewhat swollen. The disc was swollen, blurred, and prominent, and its veins much distended. It is said that the man had no positive paralysis, but he had bed-sores, and, as his left eye inflamed, and the cornea became opaque, it may be conjectured in the absence of any statement on the point, that he had paralysis of the fifth on this side as a sequel to the hyperæsthesia. The man at length sank. The following are the interesting particulars of the post-mortem.

"*Sectio cadaveris, by Dr. W. H. Taylor, pathologist of the hospital, seven hours after death.* Dura mater firmly adherent to the calvaria; membranes of the brain much engorged with blood; increased number of puncta vasculosa in substance of brain; two ounces of limpid serum in the lateral ventricles, which were much distended transversely; small amount of serum in the middle fossa. The anterior portion of the right hemisphere of the cerebellum was firmly adherent to the base of the cranium; and lying anteriorly to and below the right hemisphere of the cerebellum was a firm, oval, nodulated tumour enveloped in a distinct capsule attached to, but easily separated from, the membranes. The tumour measured four and a half and three and a half inches in circumference in the two directions, and in structure resembled encephaloid. It had compressed the right half of the medulla oblongata toward the median line. Imbedded in the substance of the cerebellum, above and behind the solid tumour, was a pyriform cyst containing transparent fluid. It measured two inches in the long and one and a half inches in the short diameter, and its apex extended into the crus cerebri. The surrounding brain substance was of a semi-fluid consistence."

Case II.—Dr. Williams' second case is reported in much

better detail than the first. A servant girl, aged 20, died after a two months' illness with severe cerebral symptoms. For some months before the date of its commencement she had, however, been liable to purposeless vomiting. Her severe symptoms set in suddenly; she became unable to hold anything in her hands; could not walk well or rapidly; failed in sight and hearing. In about a week she was quite blind, and her pupils were dilated and insensible; in this condition she first came under Dr. Williams' notice, unable to see, hear, or speak, and remarkably drowsy. Her pulse was 46 and irregular; respirations 15; extremities cold. The ophthalmoscope showed the discs swollen, opaque, and streaked with ecchymoses. After a month in the hospital the patient had improved somewhat. The right eye had now no perception of light, but she insisted that her left was perfect, although on trial she could only read Snellen $6\frac{1}{2}$ at 6″. It was now ascertained that she had complete anæsthesia of the right side of the face and right eye. Her hearing and taste were now perfect, but there was some imperfection of sense of smell. She felt giddy, but could walk about the ward, and had no loss of motor power. She suffered from pain and heaviness over the eyes, but never in the back of the head. The pain was increased by any sudden motion. One morning (May 5th) she had severe vomiting, and complained of great pain in the forehead. She became comatose and died in the afternoon. She had not had any convulsions whilst in the hospital.

The following are the chief facts of the autopsy, which was performed by Dr. Taylor:—

"On removing the brain, a tumour was discovered about three inches in length lying under the left anterior lobe of the cerebrum, and extending from the falx cerebri, to which it was adherent, over the cribriform plate to the ethmoid, involving the left olfactory nerve, backwards and diagonally across the sella turcica to the right petrous bone, where the end of it pressed on the fifth nerve of the right side at its point of exit from the posterior fossa of the base of the brain. There was thus direct pressure on the left olfactory, the optic chiasm, the cavernous sinus and ophthalmic branch of the fifth nerve, as well as upon the main trunk of the trigeminus, at the seat of the Casserian ganglion. The posterior part of the tumour extended across to the right side, about an inch beyond the median line, producing a corresponding concavity in the right side of the brain. The posterior two-thirds of the tumour were very soft and red looking, very much like brain tissue in a state of red softening. The anterior one-third was about the size of a walnut, hard, pale, nodular and scirrhous in its character. When the brain was laid on the table, the tumour projected nearly an inch beyond the end of the anterior lobe. The loss of smell in the left nostril, and the complete anæsthesia of the right half of the face, receive

a ready explanation from direct pressure. The impairment of vision was due to a threefold cause—direct pressure on the optic chiasm; compression of the cavernous sinus, and obstruction to the venous return from the retina, giving rise to neuro-retinitis; and thirdly to increased intra-cranial pressure."

Dr. Williams directs attention to the fact that although the fifth nerve was quite paralysed for some weeks, yet no inflammation of the cornea followed. At one time the conjunctiva became congested "and the eye painful," but on use of a protective bandage the irritation passed away. If the eye became painful during the congestion, we must object that it is probable that the paralysis was incomplete. In cases of absolute anæsthesia the eye may go through all the stages of destruction without the patient ever having the slightest sensation of pain.

Dr. Williams records a third case of optic neuritis, in which the diagnosis of cerebral tumour was given, but as the patient is yet living the case is of less interest.

ALBUMENURIC NEURO-RETINITIS.

By Professor Roosa, of New York, Medical Record, March 16, 1868.

Professor Roosa, amongst various other clinical cases, relates one which interests us, because it is an example of what certainly occurs sometimes, and has not as yet been noted with sufficient emphasis. We allude to the occurrence of neuritis in connexion with albumenuria, without the peculiar changes in the retina usually met with in that disease.

The patient, a boy of 18, had been liable to sick headaches for a year. His sight had failed for four weeks before he came under observation. The writer thus describes the neuritis:—"On examination with the ophthalmoscope it is found that there is no appearance of the optic nerve entrance, except that the vessels may be seen emerging at the porus opticus, the veins tortuous and distended, while the normal appearance is not recognized at all. There do not seem to be any exudations or hemorrhages in the retina." The patient's urine was loaded with albumen. The professor adds: "I should remark that there are none of the peculiar patches in the retina which characterize nephritic neuro-retinitis, because the disease has not advanced far enough." This explanation is perhaps a little doubtful, for nephritic deposits are usually seen first near to the yellow spot, and there are, on the other hand, well marked cases in whch the disease is throughout a neuritis rather than a retinitis.

ECONOMIC STATISTICS OF THE HEIDELBERG OPHTHALMIC HOSPITAL.

Letter from Professor Knapp.

The following facts may be of some interest to those taking part in the present discussion as to special hospitals, &c. Professor Knapp, writing to an American Journal, strongly urges the propriety of establishing a second Ophthalmic Hospital in New York. We extract from his letter the following:—

"During the year 1867, in the Heidelberg institution, which is under my care, 3,314 eye patients have been treated; 706 were in-patients with a hospital sojourn of 14,268 days; 607 patients, with 10,488 days of keep ("verpflegtagen"), belonged to the poorer classes. The average duration of a patient's stay in the hospital was 20 days. The highest number of in-patients at the same time was 65; the average number 39. The institution has 65 beds. During the course of the year 413 important operations on the eye and its appendages were performed; 120 for common cataract, 15 for secondary cataract (some after the method of Dr. Agnew, N. Y.), 111 iridectomies, 81 operations for squint, and 66 of different kinds, such as extirpation of the globe, plastic operations of the lids, &c. The total income was 13,328 florins, the total expenditure 13,858 florins.

"There are very few ophthalmic establishments in Germany which have a greater number of patients. The reason of it is that Heidelberg, although a small town of only 18,000 inhabitants, has a celebrated university, with professors of world-wide reputation, such as Chelius, Helmholtz, Arnold, Bunsen, Kirchhoff, and is, besides, the medical centre of about one and a half millions of people. The government gives considerable aid to the ophthalmological clinic; and the neighbouring districts, of about 600,000 inhabitants, have, at my suggestion, made arrangements with the institution, so that every indigent eye-patient has a right for free treatment, and, if necessary, free admission into the hospital, the expenses of which are paid by the administrations of the said districts. This highly commendable arrangement only exists in the liberal grand-duchy of Baden.

"Since Prof. Gräfe, in Berlin, has had such a splendid success in starting a private ophthalmic institution, a great many smaller ones have been established in different towns of Germany; all have had a certain success at the beginning, but many of them now labour under great financial difficulties, and are gradually disappearing. My own opinion is, that special hospitals for eye-diseases in our country are only of need and likely to last in large cities and universities, where the State pays the unavoidable deficit."

CASE OF TRAUMATIC ANEURISM OF THE ORBIT—EXOPHTHALMOS—LIGATURE OF BOTH CAROTID ARTERIES, AND OBSERVATIONS ON THE STATE OF THE RETINAL CIRCULATION AFTERWARDS.

By Dr. Williams, Cincinnati:—Medical Record, April 15, 1868.

The following case is such an important one, that we extract it almost entire:—

"Dennis C., æt. 20, was admitted June 15, 1867. Seven months previous to admission he received an injury which caused a depression of the skull 2½ inches long, across the vertex from the left frontal eminence, followed immediately by exophthalmos of the left eye from aneurism of the ophthalmic artery. When admitted, his cerebral functions were unimpaired, and digestion perfect. The left eye was protruded beyond the equator, but the patient could still close the lids over it. The conjunctival, but especially the subconjunctival vessels, were enormously increased in number and size, and extremely tortuous, with slight serous chemosis at the outer canthus. There was a very strong pulsation, with an intense aneurismal thrill, and a very loud bruit, audible even to the patient himself, and most marked at the inner canthus and over the brow. Vision of this eye very imperfect. The ophthalmoscope showed the retinal vessels to be, like the external, excessively enlarged and tortuous, especially the veins. The optic papilla was greatly swollen, ill defined in its outlines, and greyish in colour, with very many minute points of ecchymosis. The blood-vessels disappeared, suddenly for the most part, in the swollen and opaque papilla, and were somewhat obscured for a short way beyond the disc. The vessels, arteries as well as veins, were very serpentine as far as they could be traced toward the ora serrata. Along the veins there were frequent ecchymoses, especially large where the vessels made sudden short bends.

June 22.—The left carotid was ligated. The thrill and murmur both ceased, but returned slightly after two hours. The vision, previously reduced to counting fingers at two feet, was not affected.

June 23.—Diminution of the thrill and bruit, the latter feebly audible to the patient.

July 1.—Thrill and murmur vary in intensity at different times in the day—rather on the increase.

July 9.—Seventeen days after the operation, the ophthalmoscopic examination was repeated. Same appearances as before operation, except an increased opacity along the course of the vessels, with more concentrated greyish patches at the knuckles where the short bends took place.

July 20.—Thirty days after the first operation, it being

evident that the aneurism was still not relieved, the other carotid was ligated in the same way by the same surgeon. Pupils were not influenced but remained active. Bruit and thrill completely silenced, but in five minutes were again heard very faintly. Vision, he says, is not worse than before the operation.

July 21.—Vision of left eye reduced to perception of light; pupil somewhat dilated, and responds feebly to light. Sight of the right eye intact—no thrill or bruit.

August 3.—Fourteen days after last ligation, the ophthalmoscope revealed a remarkable change in the fundus of the affected organ. Swelling and opacity of papilla nearly gone; vessels much straighter and smaller; exudation at points of sudden curvature disappeared, except two or three; some ecchymoses here and there in process of absorption; vessels of papilla, both arteries and veins, completely and instantly emptied by the least possible pressure on the eye with the finger. I could see them grow pale even before I was conscious of making any pressure, even the weight of the finger affecting their fullness. What was still more interesting, was the slowness with which both sets of vessels filled after the pressure was relaxed, and the entire absence of pulsations under any circumstances. This was true of the retinal vessels in both eyes, and the acuteness of vision was alike quickly affected by slight pressure, both facts showing the diminution in the vis a tergo, and the feeble circulation in the brain and retina after ligation of both carotids.

August 11.—Same condition with merest suspicion of bruit. It is now three weeks after the second ligation, and the vision of the left eye has so far improved that he can count fingers at two feet, and decipher No. 20 print, and see large familiar objects at seventy yards. Vision of the other eye perfect, but eyes easily fatigued with attempts to see small objects.

August 21.—Discharged, to return in three months.

DR. HUGHLINGS JACKSON ON CEREBRAL DISEASES IN CONNECTION WITH OPHTHALMIC SYMPTOMS.

In the fourth volume of the London Hospital Reports, Dr. Hughlings Jackson publishes thirty cases of cerebral disease, and as there are in many of them symptoms of ophthalmological interest, we may briefly draw our readers' attention to them.

In Case II. There was palsy of the fifth—with loss of eyeball—sixth, and other nerves from syphilis (autopsy).

Case III. Paralysis of the right third nerve with hemiplegia of the same side (autopsy). There was a neuroma of the right third nerve, and a syphilitic nodule in the left motor tract. In the right optic disc there were inflammatory changes, not in the left. This Dr. Hughlings Jackson thinks is to be accounted for by the local

effect on the right optic nerve of disease found at the base of the skull.

Then follow three cases of double optic neuritis, with convulsions beginning in the left hand, and epileptic hemiplegia. In each case there was syphilis, no autopsies.

Case IX. Is one of retinal degeneration, with retinal and cerebral hæmorrhage in a woman only 19 years of age. The kidneys were granular, and the left ventricle of the heart was much hypertrophied (autopsy).

Dr. Hughlings Jackson has recorded two similar cases with autopsies in the previous (the third) volume of the Hospital Reports referred to.

Case X. Is one of conjugate deviation of the eyes with turning of the head in a case of hemiplegia from clot (autopsy). In this case there were no morbid ophthalmoscopical appearances.

Case XIV. Is one of conjugate deviation of the eyes in a case of hemiplegia and hemi-spasm, the result of arachnoid hæmorrhage (autopsy).

Case XV. Is one of very extensive softening of the left cerebral hemisphere without changes in the discs (autopsy).

Case XXV. Abscess in the left cerebral hemisphere, with double optic neuritis, convulsion, and hemiplegia (autopsy).

Case XXVI. The same (autopsy).

Case XXVII. Swollen disc, with pyæmia from ear disease (autopsy).

Case XXIX. Double optic neuritis from hydatid tumour in the left cerebral hemisphere (autopsy).

AN IMPROVED METHOD OF EXTRACTION OF CATARACT.

Dr. Wolfe, of Aberdeen, has published, under the above title, a little book of 71 pages, which contains descriptions of several of the methods of extraction now in common use, and the announcement of a modified one, devised by himself.

Following Mooren's recommendation, Dr. Wolfe performs a preliminary iridectomy, six weeks before the extraction. In the extraction he uses a narrow Beer's knife, and makes a corneal flap in size a line more than a third of the circumference of that structure. When the corneal section is nearly completed, the edge of the knife is inclined backwards under the conjunctiva, and a bridge of the latter is left uncut. No speculum is used, and the patient is not under chloroform. The operator uses both his hands, one for the knife, and the other to steady the globe with a *pique de Pamand*, and leaves the lids to his assistant. Having completed the corneal section, but left a conjunctival bridge, he takes entire charge of the lids, and using the fingers of his left hand as a speculum, with the right snips through with scissors the portion of conjunctiva left undivided. Next, the capsule is

largely opened with cystotome, gentle pressure being made meanwhile, in order to keep the capsule tense. After a few seconds of rest, the operator takes a fold of the upper lid between the fingers and thumb of one hand, applies the thumb of the other to depress the lower lid, and to press against the globe, directs his patient to look down, and by simultaneous gentle pressure above and below, ejects the lens from its bed.

Dr. Wolfe speaks warmly of the results obtained by this method.

The work is illustrated by some rather diagram-like woodcuts. In the first of these the wire speculum is represented as buried in folds of skin quite external to the edges of the lids—an utterly impossible position.

RETINITIS IN BRIGHT'S DISEASE—DEATH OF THE PATIENT.

Dr. Orestes Pray relates in the "Medical Record," August, 1868, a case of albumenuric retinitis which ended fatally. The patient was a lawyer, æt. 52, who had suffered for some years from severe sick headaches. At length he began to pass more urine than natural, and his sight failed. Both retinæ were the seats of the characteristic changes. Dr. Noyes, of New York, confirmed the diagnosis. The quantity of albumen was so small, that it might easily have been overlooked. The failure of sight occurred rapidly; sickness and headache increased, and death, preceded by coma, occurred five weeks after the first ocular symptoms.

EXCISION OF THE EYEBALL FOR CANCER, AND NO RETURN AT THE END OF SIX YEARS.

Mr. Brudenell Carter records in the "Medical Times and Gazette" for February 20, 1869, the important fact, that a child whose eyeball he removed, for malignant disease, in January, 1863, is still alive and well.

On turning back to Mr. Carter's record of the case in December, 1863, the diagnosis of malignancy seems to have a little doubt attached. Before the excision, Mr. Carter "was inclined to think the disease tubercular." After removal the globe was examined by Dr. Monckton, of Maidstone, who writes, "The new growth itself was a little puzzling. The first glance at it under the microscope seemed conclusive as to its encephaloid character; but in seeking fresh portions, several distinct gritty calcareous particles were found, visible to the naked eye, and appreciable to the finger, which strongly suggested tubercle. I submitted a piece to Dr. George Johnson, of King's College, and he decides in favour of encephaloma, in which he says cal-

careous particles are not so uncommon as I had supposed. The development must have been rapid, for the cells were very numerous and small, having hardly passed beyond the nuclear condition." Although the diagnosis of cancer (or glioma) may be admitted to be very probable, it would probably scarcely satisfy Virchow. The tumour is described by Dr. Monckton as being developed in connection with the optic disc and retina, easily separable from the choroid, and the size of a small hazel nut. The patient was a boy, æt. 4, ruddy and healthy looking.

The original report is at page 583 of the "Medical Times and Gazette" for December, 1863.

STATISTICS OF THE MANCHESTER ROYAL EYE HOSPITAL.

The fifty-second annual report of the Manchester Eye Hospital contains, as usual, a well-arranged table of the diseases treated during the year. It appears that, including accidents, an average of 12½ new patients apply daily, and that the total of admissions during the year was 3,872. Of these 398 were made in-patients. The average stay of each in-patient in the hospital was four weeks and a day, and the average cost for board tenpence a-day. There were 110 cases of cataract, and for these 118 operations were performed. Flap extraction was done in 17 cases, linear in 20, Graefe's new method in 26, Teale's suction method in 4, Pagenstecher's in 2, discision in 43, removals of capsule in 6. There were 30 cases of glaucoma, and iridectomy for this and for other diseases was performed 150 times. As regards the rarity of certain diseases, we may note that Bright's disease of the retina occurred but once; Retinitis pigmentosa five times; Exophthalmic goitre once; Apoplexy of retina three times; Cyclitis once, and Astigmatism only twice. There were two cases of embolus of the central artery of the retina. (These ought to be published.) We envy our Manchester confrères their light work in the matter of spectacles. During the whole year there were (exclusive of cataract cases) something short of 100 cases needing glasses;—Myopia 36, Presbyopia 22, Hypermetropia 39. That many patients still fall into the hands of careless prescribers is implied by the fact that no fewer than 15 applied in consequence of lead deposits in the cornea. This proportion is much higher than that of Moorfields. Of herpes ophthalmicus, molluscum, or rodent cancer, not a single case is tabulated, but possibly those of "epithelioma" belong to the last mentioned.

Under the head of Operations on the Lachrymal Passages, we have Weber's operation in 65 cases, Bowman's in 9, and obliteration of sac in 6.

Abscision of the globe (Critchett's operation) appears to

maintain its ground. It was performed in 11 cases, and enucleation in 15 others.

The report bears testimony to the care with which the statistics are kept, and is very creditable to the Institution.

ON A NEW AND SIMPLE MEANS OF DETECTING MIXED ASTIGMATISM BY THE OPHTHALMOSCOPE.

We make the following extracts from a paper by Mr. Couper, in the "Medical Times and Gazette," for January 30, 1869:—

"It lately occurred to me, while examining some cases of mixed astigmatism with the mirror alone, that both an inverted and an erect image ought to be alternately visible, according as the fundus is viewed through the meridian of greatest or that of least curvature of the media. I selected for examination a boy of 13, who has myopia $\frac{1}{18}$ in the vertical meridian, and absolute hypermetropia $\frac{1}{18}$ in the horizontal meridian, and after fully dilating the pupil by atropine, endeavoured to analyse the eye, and, as it were, separate one section of the media from another by means of a diaphragm furnished with a narrow slit. Through this slit, held alternately in the plane of the least and of the greatest curvature of the media, I sought to illuminate the fundus and obtain an alternately erect and inverted image of it, but I failed. Too little light was admitted by the slit, and there was a difficulty in keeping it opposite the pupil.

"On resuming the examination without the slit, I saw the erect image plainly when vertical branches of the retinal vessels were made (by appropriate movements of the observed eye) to sweep horizontally across the area of the pupil. The reason of this was obvious. Rays diverging in a horizontal plane from any point in these vessels are refracted by the horizontal section of the media—the meridian of least curvature in this instance—and, holding, as they do, a slightly divergent course after leaving the cornea, are in a condition to come to a focus on the observer's retina.

"This erect image, however, underwent a peculiar distortion, as though a vessel changed the direction of its curve in sweeping across the field. Thus it mattered not whether the vessel was seen at the extreme right or the extreme left of the pupil; it always presented a concave bend towards the centre of the pupil. I was soon convinced that this confusion of the image was due to the fact that, while the straight vertical part of the vessel was viewed erect, the curved part was seen inverted, and therefore with an apparent motion opposite to that of the other, because seen by means of rays diverging in the vertical plane and refracted by the meridian of greatest curvature of the media.

"Reasoning from this, I argued that I ought to see an in-

verted image of horizontal retinal vessels by making their image sweep in a vertical direction through the pupillary area; and, on putting the matter to the test, I did, in fact, get the inverted picture with the utmost distinctness.

"I had arrived, therefore, at this result, that, taking the precaution to recede sufficiently to make sure of seeing an inverted image, should there be one, and then simply causing the observed eye to follow gentle movements of my forefinger, first in a horizontal and then in a vertical direction, the erect and inverted images successively came into view without any change in my distance from the patient, and without any change in the adjustment of my eye.

"I now turned to the other eye, which was not under atropine, to learn if both images were as readily seen through an undilated pupil. They were as visible as ever, but it was now necessary, on account of the lad's perfect power of accommodation, to have his eye adjusted for a distant stationary object, and to give rise to apparent motions of the ophthalmoscopic image by movements of my own head.

"I had soon the opportunity of repeating these observations on an eye with hypermetropia $\frac{1}{12}$th absolute in the horizontal plane, and myopia $\frac{1}{20}$th in the vertical plane. Here the inverted image being formed at a distance of twenty inches, I had to recede about thirty or thirty-two inches from the eye in order to see both images. Even at this distance both were readily distinguishable, and I have no doubt that as small a degree of mixed astigmatism as of hypermetropia or myopia can be thus recognized, and I am satisfied that the ophthalmoscopic test will prove as practically useful in the first as it has proved in the two latter."

THE MECHANISM OF ACCOMMODATION.

[*An Abstract reprinted from the Journal of Anatomy and Physiology, November,* 1868.]

Coccius has made a number of observations on the mechanism of accommodation in the human eye by examining during life the eyes of those who had had iridectomy performed upon them. He observed that when the accommodation of the eye is altered from that for a distant, to that for a near object, the ciliary processes advance and become somewhat larger; the zonule becomes broader; and the dark band which represents the border of the lens becomes broader and darker. Atropine occasions a decided retraction, Calabar bean, a decided advance of the ciliary processes. He thinks that the cause of these changes can only be found in the action of the ciliary muscle. He thinks that the ciliary muscle cannot have a fixed point anywhere but anteriorly near the canal of Schlemm, else the ciliary processes could not be drawn forward. He thinks that the lateral swelling

of these is due to compression of their veins by the contracting muscle. The increased curvature of the lens during positive accommodation (accommodation for near objects) is according to him not only due to the traction exercised by the ciliary muscle, but also to pressure.

Helmholtz's theory is that during negative accommodation the lens is kept flat by the elasticity of the zonule, and that during positive accommodation the ciliary muscle counteracts the action of the zonule, and the lens becomes more convex by the action of its own elasticity. In opposition to this, Coccius adduces the fact that the transition from accommodation for distant to that for near objects, takes place more rapidly than the inverse movement does. He thinks that this fact does not favour the idea that the elasticity of the zonule is greater than that of the lens, but that the lens returns to its somewhat flattened form during negative accommodation by reason of its own elasticity.—(From an abstract in the "Centralblatt," Nos. 31 and 32, 1868.)

On the other hand Hensen and Völckers (Experimental untersuchung über den Mechanisums der Accommodation. 8vo. pp. 56, Kiel, 1868), from numerous experiments on the eyes of dogs and pigs, support Helmholtz's theory of accommodation.

These authors made also some interesting observations on the movements of the iris in the dog. They found that after removal of the ciliary ganglion the pupil is of medium size and insensible to the action of light. Nevertheless irritation of the cervical sympathetic produced dilatation as before removal of the ganglion, showing thereby that the sympathetic fibres do not pass through the ganglion: they form fine fibres which lie either upon the optic nerve, or in the surrounding tissue: irritation of the peripheral ends of these after they have been divided dilates the pupil, while irritation of the central portions occasions pain. Irritation of the ciliary nerves caused extreme contraction of the pupil. Irritation of the four chief ciliary nerves occasioned a pear-shaped contraction of the pupil. Dilatation of the pupil followed the use of atropine after, just as before removal of the ganglion.

After laying bare the ciliary muscle by removal of a portion of the sclerotic, it was seen to sink when the ciliary nerves were irritated, the portion of the choroid lying behind became arched forwards synchronously with the sinking of the muscle.—(From an abstract in the "Centralblatt," 1868, Nos. 29 and 30.)

A. V. GRAEFE ON THE DOCTRINE OF SYMPATHETIC OPHTHALMIA.

Archiv. f. Ophthalm., vol. xii, section 2, pp. 149–174.

The doctrine of sympathetic ophthalmia is in many points still much in need of the supporting and correcting aid of accurately observed facts. Although all are agreed that an inflammation

of one eye, may under certain circumstances seize on the other, yet the peculiar nature of these circumstances is still shrouded in obscurity. It is indeed known that such a transmission is chiefly consequent on injuries, and most frequently of all on injuries with retention of foreign bodies. But it has been observed even without previous injuries, and has been on the other hand completely omitted in a very large number of cases of injury (even when the foreign body was retained). The question of the proximate causes of the sympathetic transmission from the one eye to the other, seems therefore to form the most important problem for the right appreciation of the etiology of this strange disease.

Without denying the fact, that it is and will remain in many cases extremely difficult, nay to a certain degree almost impossible to distinguish the *successive* seizure by an internal disease, acting on both eyes in common, from the *relative dependence*, which exists between both eyes in reference to certain forms of inflammation, v. Graefe yet considers it necessary to add something as to the modifications which his views have recently undergone.

First of all, it must be observed, that v. Graefe is no longer inclined to assume that simple *increase of tension* can of itself produce sympathetic ophthalmia, he inclines to think that a hyperplastic cyclitis usually intervenes.

"*A peculiarly painful sensation on touching the region of the ciliary bodies*" is considered by v. Graefe, as the chief symptom characteristic of hyperplastic cyclitis. This symptom may indeed be somewhat obscured by a condition of increased tension of the globe, the conduction in the ciliary nerves being in that case diminished, but if it is observed with diminished tension, and not only transitorily, but continuously, it must be looked upon as a symptom of plastic cyclitis, and as very important in respect to the other eye.

Cyclitis or irido-cyclitis usually proceeds from malignant iritis, the malignancy of which arises chiefly from an irrepressible tendency to cell proliferation on the posterior surface of the iris, which may very soon extend to the ciliary processes. The picture of this malignant iritis is drawn with an accustomed master-hand. The observation is added that the rapid transition of this iritis into irido-cyclitis is indicated by even more definite signs, among which are reckoned "the striking fluctuation in the consistence of the globe, the great painfulness of the ciliary region on touch, under certain circumstances symptoms of affection of the vitreous humour, and at last a definite change in the position of the iris," which latter seems to be dependent on a retraction of the periphery of the iris, in consequence of an agglutination of the posterior surface to the ciliary processes.

As very important for practice, v. Graefe refers to the fact that very violent suppurative inflammation, in which the greater part of the cavity of the globe is filled with pus, does not constitute a cause of sympathetic disease, and recommends, on the strength of this fact, the advantages of artificial stimulation of suppurative iritis by means of the seton, a plan much recommended by him formerly.* The explanation v. Graefe finds in the simultaneous destruction of the ciliary nerves—that is, of the channels through which the inflammation travels from the one eye to the other.

The enucleation of the eye first affected, which, according to the rule now in vogue, is to be carried out immediately on the appearance of sympathetic phenomena, yields, according to Critchett's† and Graefe's experience, by no means such brilliant results as was formerly believed. The successful results refer chiefly to that milder form of sympathetic iritis, which appears on the whole in the shape of secretory inflammation (iritis serosa); in the case of malignant iritis progressing with the formation of deposits on its posterior surface, enucleation of the eye first affected, does not commonly, essentially retard the process in the other if distinct traces of a diseased state were already perceptible in it. V. Graefe could only observe a cessation extending over several days, but not a permanent digression from the typical course. He adheres, nevertheless, to his former practice of enucleating the first eye on the commencement of sympathetic irido-cyclitis, *whenever it is fully blind*, and especially if it is moreover, *painful on touch*, since the cause which produced the sympathetic disease will probably continue to aggravate the condition, and to prevent therapeutical interference with the second eye. But if even only a small vestige of sight is left in the first eye, it might be advisable not to undertake the operation.

Completely agreeing with Critchett, v. Graefe likewise thinks that operations on the eye secondarily diseased must for the most part be abstained from during the acute stage. Apart from the great, often even insurmountable, difficulties of iridectomy, the reactionary formation of the inflammatory products will usually be the result of operative interference. The evil is thus aggravated instead of being diminished.

V. Graefe has, however, again taken up the experiments with iridectomy on the sympathetically affected eye. He performed iridectomy, as he is now in the habit of carrying it out as a preliminary procedure in extracting the lens, making the wound quite peripherally and with a narrow knife. In this way the operator succeeds more easily in removing a considerable portion of the iris, and in one case, which is communicated in

* Archiv. f. Ophthalm. xii, 2, p. 105.

† Klinisch. Monatsbl. f. Augenheilkunde, I, p. 440.

detail, the visual power rose after the operation from $\frac{1}{5}$ to 1. Whilst this case affords encouragement to further trials, v. Graefe nevertheless insists upon undertaking the operation at once, as soon as its ominous course is distinctly marked, for if malignant sympathetic iritis is allowed to establish itself, increasing objections are opposed to operative interference, and for such a case v. Graefe repeats, with all urgency, his advice of expectancy (three to four months), until especially all phenomena of sensitiveness in the ciliary region and some other symptoms disappear, or, at least, decrease perceptibly.

The operation, which is only required afterwards in the period of remission, consists in the extraction of the lens, as well as of the iritic deposits intimately united to the capsule of the lens.

The author concludes with some observations on the less dangerous form of sympathetic iritis serosa, adding the short history of two peculiar forms of disease, on the sympathetic mode of origin of which there can exist no doubt, and which he denominates retinitis-sympathica, or choroido-retinitis sympathica.

[N.B.—The above is a translation (with omissions) of an able abstract of Graefe's paper by Zehender.—Ed.]